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Original Articles.

ELECTRO-THERMIC HEMOSTASIS IN ABDOMINAL AND PELVIC SURGERY.*

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With the development of aseptic surgery arose the necessity in hemostasis, not only of a certain method of occluding the vessels, but of doing it with an agent which would not add a complication to the case either immediately or remotely. No method of hemostasis generally used fulfills this definition. The use of the actual cautery leaves carbonized tissue, a slough and the danger of subsequent hemorrhage. The objections to silk ligatures, especially the size required for large blood vessels and pedicles in the pelvis, are only too well known. The introduction of sterile absorbable ligatures bid fair to solve the problem; yet we have lately the angiotribe, which is also uncertain, for Doyen and those following him use it now simply to compress a groove in which the animal ligature is applied without danger of its slipping. The angiotribe alone, without the addition of the ligature, is slow and with safety can not be removed much under three minutes. If applied four times in a case nearly a half-hour is consumed, for the time used in removing and applying is considerable. In the shorter process by the angiotribe with the ligature added we retain some of the dangers of the ligature. In the use of the ligature the personal equation is a great and important factor in the results obtained. Yet allowing absolutely perfect technique and sterile material the ligature in an infected field or when thrown around such a body as the appendix or Fallopian tube is especially objectionable. I will make no attempt to cite cases showing the various effects following occasionally the use of ligatures. I will say this: If it is possible to control hemorrhage within the abdomen and pelvis without the use of any extraneous material which remains after hemostasis and by a method which is rapid and fulfills the definition of a perfect hemostatic as given in the beginning of this paper, we have added very materially to the resources of surgeons. Is there any hope of such a possibility? I believe so. As already stated, the angiotribe is slow, and after its use a fair percentage of cases bleed. There is something missing in this instrument, that is, sufficient heat in the compressing blades to cause coagulation of the albuminous constituents of the compressed area. This compressed and coagulated area under the proper amount of heat becomes desiccated. The constituent histological elements, whether blood vessels, nerves or mucous membrane, in the areas so treated lose their identity so that the microscope does not discover them. The only practical method of obtaining heat in the blades in a measurable and controllable form is by electricity. Hence the instruments are electrothermo-hemostatic.

The credit for the introduction of such instruments and methods belongs to the late Dr. Skene. While he gives Keith the credit for having first used heat to the compressing blades of a forceps in the control of hemorrhage, and while he leaned on Keith's experiences, the application of electric heating for this purpose and the development of the first electrothermo-hemostatic instruments was an original procedure with Dr. Skene, and so important a one that with its reduction to the proper degree of practicability it bids fair to at no distant day displace the ligature, especially in the hospital operating room. The introduction of new methods is attended nearly always by imperfect agents. Skene's electrothermic forceps and clamps were a wonderful innovation and a great advance over the crude application of pressure and heat as practiced by Keith. Skene's instruments were open to some objections, which partly accounts for the slowness of their adoption by the surgical world. When I became interested in the subject the two chief objections were that the conducting cord was rubber-covered, interfering with perfect asepsis, and second, the heating medium was not capable of heating sufficiently rapidly the heavier instruments. I decided to use irido-platinum for the heating medium, a ribbon of which an inch and a half long and one-quarter wide was concealed and insulated in one blade of my first forceps. It required a much heavier current than the Skene forceps and gave a more rapid and greater amount of heat. My second improvement was to insulate and inclose in metal the conducting cord, which made a waterproof instrument, capable of standing boiling indefinitely. The Skene instruments have now this improvement. My experience with the various forceps I had made led me gradually to a better understanding of the greatest deficiency in this method of hemostasis for thick surfaces and pedicles, namely, the inability to get sufficient pressure between the blades of any instrument, forceps or clamp, in which unfortified hand pressure alone was used. On more than one occasion, after supplying even more than enough heat to the blade of my forceps, bleeding occurred from some vessels running through the compressed area, after section, requiring re-application of the instrument to these points. Another objection I found to my own early instruments was, that owing to the great resistance of the comparatively large platinum surface the conducting cord became so hot as to heat the whole length of the forceps, and the handle rendering it dangerous when in contact with the tissues and necessitated great care in protecting them. I finally had made an electrothermic angiotribe with the conducting poles emerging

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at right angles from the proximal portion of the heating blade. This instrument was made with a screw at the end of the handles and with teeth at the end of the blades to prevent recession of the compressed tissues. Both the teeth and the screw were found objectionable. The teeth were removed and the screw replaced by an easily-working lever. Subsequently I modified the lever angiotribe of Doyen into an electrothermic angiotribe with the poles from the heating blade. This is an extremely useful instrument, can be made both light and heavy, and will answer all indications in electrothermic hemostasis, except very small bleeding points, as in the omentum, mesentery, and incisions, for which indications I have devised an artery forceps electrotherm to be presently described.

The heating medium in my large forceps and angiotribe is a piece of irido-platinum, one and a quarter to one and a half inches long, three-sixteenths wide and of 24 gauge, and is split down the middle after the fashion of a cautery knife to near the end. This is concealed and insulated in one blade, and with a current of 5 volts and 60 amperes will heat the blade in from twelve to thirty seconds, according to the thickness of the metal forming the blade. By increasing the voltage and amperage within safe limits the heat may be generated more quickly. The longest application with the heaviest instrument need never exceed one minute, including the time of heating. The lighter instruments for occluding the appendix and hemostasing the meso-appendix and isolated points in the broad ligament are affected in from fifteen to thirty seconds. I have found from practical use that the proper degree of heat to be generated in the blade is that which causes a few drops of water placed on it to boil. When this point is reached the current is shut off. This temperature is higher than Skene recommends. It will not char or burn the tissues. It may not be generally known that a current of steam projected against incised tissue for a few seconds has not interfered with primary union. If we remember that the tissue to be hemostased by the electrothermic method is first compressed and freed from considerable moisture and that the temperature I advocate is exceedingly brief at this point, being dissipated rapidly, it is easy to see that it is safe and that no carbonized tissue will be left. The largest size angiotribe has the blades wide enough to make section through the hemostased area, rendering operations like hysterectomy practically bloodless.

By the use of one angiotribe and one medium forceps with strong compressing blades any major hemostatic problem can be solved. For small vessels, bleeding points in incisions, as in the removal of the breasts, in the omentum, mesentery, or isolated points anywhere that can be grasped by hemostatic forceps, I have devised what I call an artery forceps electrotherm. It consists of a small oblong block of steel hollowed out for the reception of a piece of platinum as a heating medium. My electrotherm heats with the proper current in five seconds. It is grooved to rest against the blades of an artery forceps near the point, to which it transmits heat. I adopt as an artery forceps a straight one like Pean's. The forceps should be straight with a fairly long blade. The electrotherm can be made to accommodate itself to any such forceps. The method of use is as follows: The artery forceps remain on points where pressure is not enough for hemostasis. The electrotherm is applied against the blade as near the point as convenient without touching the tissue, and the current turned on for the few seconds required to obtain the proper heat. The current is turned off, but the electrotherm kept applied about five seconds longer. The electrotherm is then adjusted to another forceps in the same manner, and another, and so on until all the forceps have had their points heated to the proper degree and all hemorrhage is controlled. During this procedure everything except the points to be hemostased are protected. On the removal of the forceps small white agglutinated and desiccated spots mark the site of the former bleeding points. The quantity of agglutinated material in these spots is very much less in bulk than the catgut which ordinarily would have been used as a ligature; it is not so foreign to the tissue, is perfectly sterile, is not a painful spot, even if a small nerve was included; its lymphatics are closed and it will not interfere with primary union. I have timed a few rapid operators applying ligatures to small bleeding points. The forceps electrotherm enables us to control the bleeding as quickly at least. With greater practice I believe it will be a quicker process.

With the above variety of instruments, the artery forceps electrotherm for small bleeding points, the electrothermic forceps for tissues of moderate thickness, the appendix and so on, and the electrothermic angiotribe for heavy pedicles, the broad ligament, and so on, it is conceivable that the use of ligatures can be entirely dispensed with and operations be performed more quickly and in almost a bloodless manner.

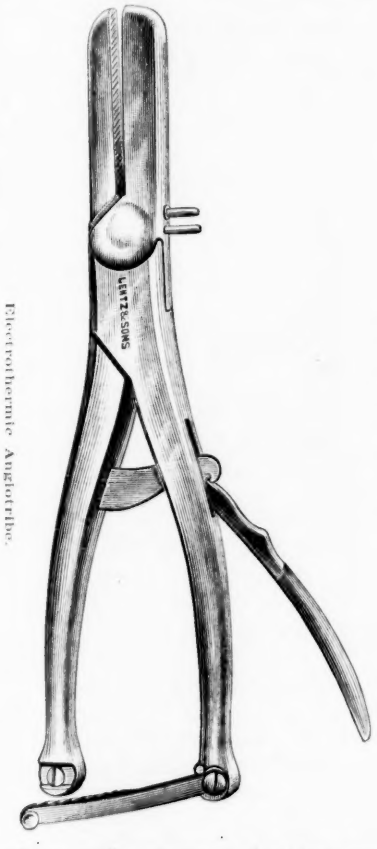
My use of electrothermic hemostasis since my first case has been quite intermittent and the number of cases to be reported is small. The excuse for the paucity of cases is that I have refrained from using this method except occasionally until I could have the instruments in a practically perfect form. I have made a variety of instruments, improving always on the last, all retaining a common feature—rapidly-heating blades. In the beginning, the rendering of the instrument perfectly sterile with the conducting cord metal-covered, and the blade air and water tight, seemed the only requirement. I then had teeth at the end of the blades to prevent recession of the compressed tissue, only to find this a great disadvantage. Ordinary heavy bladed forceps were then found to yield when used on thick pedicles, the Fallopian tube, and so on, and necessitated the introduction of the electrothermic angiotribe. In all, I made seven different instruments before I obtained the proper three. Another reason for not using the method more often is, that owing to the building operations at St. Mary's Hospital and the absence of the electric current, I found it inconvenient to transport and charge a storage battery, and was not always equipped when I might have used the method.

The essentials in this method of hemostasis are, 1, the requisite amount of even pressure between the blades, because with too little pressure even more than enough heat may not control the bleeding; 2, the proper amount of heat, because we must not char or carbonize, and 3, a measurable source of electricity. These three essentials form a unit, and being given there is only one danger, namely, the contact of bowel and other surfaces with the heated blades, which is avoided by using gauze or other means of protection. As to technique, the only other point to mention is that the operating field shall be as dry as possible.

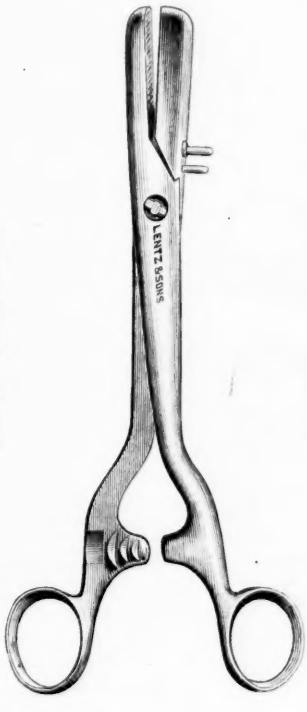
The third essential, a measurable source of electricity, means that it is a dangerous method of controlling hemorrhage without an amperemeter in the circuit. Up to the present I have used storage batteries of two and three cells with a meter attached. As I conceive it, a

meter is absolutely essential, because in a procedure that could be so dangerous, mathematical exactness is required. Every piece of platinum in the heat chamber gives the proper temperature to the blade for a certain voltage and amperage in so many seconds. In other words, when our meter registers we know we will have the proper heat in the blade in so many seconds. To exemplify, the heaviest angiotribe, when connected with the strongest current of my two-cell storage battery, which is approximately 5 volts and 60 amperes, will heat in thirty seconds. My three-cell battery when fully charged gives a little over 7 volts and will heat the same blade in twenty seconds. If the batteries are not fully charged the voltage and amperage decreases and the time required for heating is longer. The small electrotherm can be heated in five seconds with a 5-volt current, whereas it can be safely heated in three seconds with a 7-volt current. This means that according to the voltage and amperage the time required to heat a piece of platinum of a certain size varies. The heating time for each instrument with a given voltage current should be known. It is practical knowledge that a surgeon must acquire before using this method of hemostasis. Guess-work is out of place. Our work will only be safe and scientifically correct when we use a meter. Up to the present I have used storage batteries only, and in a hospital having the continuous current, where they can be constantly charged without transporting, they are very easily managed and serviceable. They give always an even current and when equipped with a proper meter and rheostat are free from objections if sufficiently used. Disuse hurts a battery. In place of a storage battery we can have a motor and transformer connected with the continuous current, the only difficulty is whether a meter can be used in connection to register an alternating current of so low a voltage as we require. In the new gynecological operating room just finished at St. Mary's Hospital, I expect to use a transformer, provided the electricians can guarantee a meter in connection. The arrangement of the apparatus in the operating room should be such that the operator has the meter opposite to him. The handle of fiber connecting the cable and instrument should have a current breaker. With a watch in sight the surgeon is thus absolutely in control.

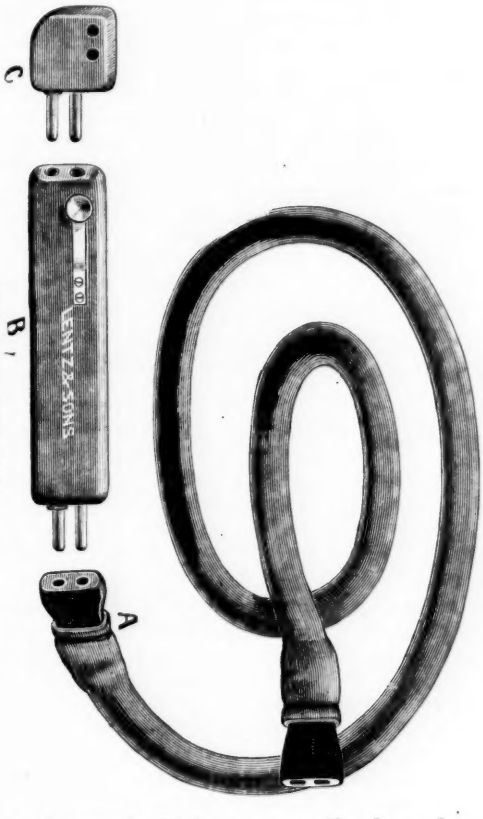
So far reference has been made to the use of these instruments in hemostasis. They are as useful in occluding tubular structures usually requiring ligation, as the vermiform appendix, the Fallopian tubes and the ureter. In dealing with the appendix and the Fallopian tube, if its canal contains pus or is infected, the stump should be left thoroughly sterile and occluded. Tying a ligature around either and sterilizing the exposed end of the stump is not enough. Before sterilizing the exposed stump we have exposed the source of infection and our sterilizing as usually done does not extend through the canal as far as the ligature. The ligature, especially if of silk, may ulcerate through to the infected canal and a localized abscess or infected area result, which often gives much trouble and which perhaps explains some of the secondary effects following in the wake of appendicitis operations. It is chiefly for this reason that many surgeons cut out the head of the appendix and treat the hole in the cecum as an intestinal wound. There is always by this method the danger of contamination, with the intestinal contents and infection. Included in the cases to be reported, the appendix was removed eleven times by the electrothermic forceps as follows: Blades heated in ten seconds or less were applied to the appendix, extending some distance into the meso-appendix, one-third of an inch from the cecum and allowed to remain thirty seconds. Section was made in the compressed agglutinated area near the distal edge, so that no escape of contents was possi-



Electrothermic Angiotribe.



Electrothermic Forceps.



Conducting Apparatus.

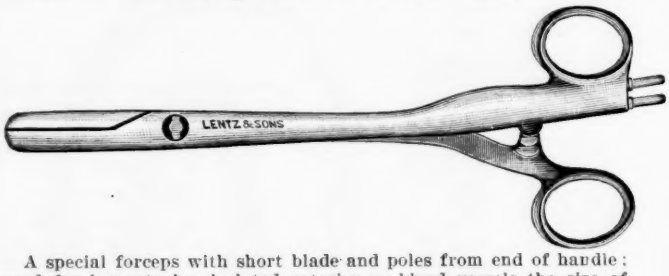
ble. The meso-appendix and its artery are controlled in the same manner and the appendix removed by section through this area. By this method even the scissors that have made the section through the compressed appendix remain sterile and require no special care. In all but three cases I passed a purse-string suture of catgut in the cecum around the head of the appendix, to invaginate and conceal the white, sterile occluded stump. I believe this step is not necessary, but without it the procedure is so radical that with these three exceptions I have refrained as yet from relying on thermic pressure alone. In two cases the purse-string used was of No. 1 catgut, which is perfectly useless as a ligature to the appendix, and proves that heat and pressure alone may suffice.

CASE 1.—Mrs. B., age 35; Nov. 20, 1899. Complete prolapse of the vagina, excoriated suspicious cervix. Vaginal hysterectomy electro-forceps.

CASE 2.—Mrs. N., age 28; Nov. 23, 1899. Several attacks of appendicitis, adherent retroflexed uterus. Ventro-fixation and then appendectomy by electro-forceps. The stump of the appendix allowed to remain without additional suture.

CASE 3.—Miss S., aged 26; Nov. 24, 1899. Appendectomy 36 hours after onset of pain. Appendix swollen to three times the normal, full of pus and becoming gangrenous. Electro-forceps used and section made through the compressed area without escape of pus. Invagination of white desiccated stump by purse-string suture of catgut.

CASE 4.—Mrs. D., age 40, Dec. 11, 1889. Removal of left



A special forceps with short blade and poles from end of handle; used for hemostasing isolated arteries or blood vessels the size of the uterine and ovarian. Water will boil on the end of the heating-blade in less than five seconds. Ten seconds is the proper application of a sufficiently heavy current.

tube and ovary and an old diseased appendix by electro-forceps. Purse-string to stump of appendix.

CASE 5.—Miss X., age 17; Oct. 9, 1900. Inflamed left tube and cystic ovary and varicose veins of the broad ligament, removed by electro-forceps.

CASE 6.—Mrs. F., age 40; Oct. 9, 1900. Left tubo-ovarian abscess and diseased appendix. Electro-forceps. Purse-string suture in addition to invaginate stump of the appendix.

CASE 7.—Mrs. T., aged 34; Dec. 13, 1900. Polycystic ovarian tumor growing from the right side and large enough to nearly cover the bowel surface. Pedicle and very thick adhesion from the right side of the bladder controlled by electro-forceps. Large appendix during acute attack, the primary object of the operation, removed by electro-forceps, with additional purse-string suture.

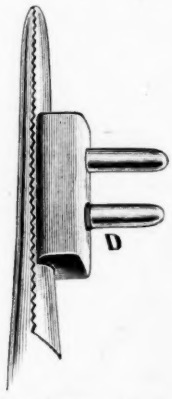
CASE 8.—Mrs. O'D., age 49; Dec. 19, 1900. Appendectomy; also hysterectomy for multiple fibroids by electro-forceps. Death in 40 hours. Acute angulation and sepsis from interference with the blood-supply to the cecum and colon. Patient had been moribund for eight weeks with appendicitis five years before and had never been well since. On operating it required 40 minutes to isolate the appendix, so matted and adherent was the bowel. The mesentery near the ileo-colic junction was badly torn during manipulation and a little of the cecum denuded of its peritoneum. Two sutures of catgut were applied in the mesentery to control severe hemorrhage and an attempt was made to cover over the raw surfaces by peritoneum. The electro-forceps were first applied to remove the appendix and then to the sides of the uterus to perform a hysterectomy. The electro-forceps were not placed near the mesentery. On autopsy the cecum and colon were angry black in places for nearly twelve inches and were acutely angulated and septic, due to the interference with circulation. No evidence of hemorrhage. The hemostatic stumps after the hysterectomy were clear and white, as was also the appendix stump.

CASE 9.—Mrs. C., age 70; Jan. 11, 1901. Spinal anesthesia; vaginal hysterectomy by electro-forceps.

CASE 10.—Mrs. S., age 45; Jan. 29, 1901. Abdominal panhysterectomy by electrothermic angiotribe. Patient had bled almost constantly for two years. She was extremely pale, and had had asthma for several years. She had just recovered from influenza. A fibroid uterus extended to above her umbilicus and bled on the least exertion. This is the first case on whom the electrothermic angiotribe was used. No abdominal pain or the slightest tympany followed the operation. Flatus passed naturally after twenty-four hours and the bowels moved by salines after forty. On the fourth day the temperature suddenly rose, breathing became quick, chest filled, so that on the fifth day there was dulness, friction and higher temperature, and death occurred just after the beginning of the sixth day from pneumonia. An immediate post-mortem of the abdomen revealed an aseptic abdominal cavity. No adhesions, even of the bowel, to hemostatic stumps. The pelvis was perfectly pale and healthy. No carbonized tissue or slough.

CASE 11.—Mrs. K., age 48; Feb. 22, 1901. Ventro-suspension and appendectomy, with extra purse-string suture around stump.

CASE 12.—Mrs. B., age 29; Feb. 23, 1901. Supravaginal hys-



Electrothermic Attachment for Artery Forceps.

terectomy for puerpural sepsis six weeks after labor. Both tubes and ovaries full of pus, with purulent foci in the uterine wall near the cornua. Electrothermic angiotribe.

CASE 13.—Miss R., aged 49; Feb. 25, 1901. Spinal anesthesia. Liomyoma extending to umbilicus, with complete prolapse of vaginal walls and cervix. Vagino-abdominal panhysterectomy by electrothermic angiotribe. Death on the eighth day after an aseptic course for the six first days. Rupture of the peritoneal reflections shutting off the vagina on the sixth day caused by vomiting a long round worm, and entrance of infection. Postmortem showed perfect hemostasis.

CASE 14.—Miss J. S., age 26; April 15, 1901. Appendectomy during an acute attack characterized by severe pain and high fever. Electro-forceps and purse-string suture. No pain in six hours.

CASE 15.—Miss S., age 25; April 18, 1901. Appendectomy during acute attack with high fever and severe pain; 7th attack in twelve years. Electro-forceps; additional purse-string suture. No pain in six hours.

CASE 16.—Mrs. B., age 25; April 23, 1901. Left ovarian abscess two inches in diameter. Thickened infiltrated broad ligament. Indurated adherent omentum in front of the uterus pressing on the bladder and feeling per vaginam like a fibroid. Left tube and ovarian abscess and portion of the broad ligament removed by electrothermic angiotrobe. Bleeding points in the omentum and on the surface of the uterus, from which it was freed, were controlled by artery forceps against which the electrotherm was placed. The appendix was exposed and found swollen with old adhesions and was removed by electro-

forceps and an additional purse-string suture. First case in which artery forceps electrotherm was used.

CASE 17.—Miss M., age 35, May 27, 1901. Had already undergone five operations by eminent surgeons, the original one being for appendicitis. I opened for the third time the original incision, freed many adhesions, finally dug out both tubes and ovaries and removed them by electrothermic angiotribe. The possibility of removing adherent tubes and ovaries through an old right-side incision speaks for the practicability of the method.

CASE 18.—Mrs. B., age 40; May 29, 1901. Intermittent pain in the right side beginning with a septic miscarriage twelve years ago. On section uterus found retroverted and fixed by light adhesions in the right side of the pelvis. Tubes and ovaries healthy except occlusion of the left fimbriated end. Uterus suspended. Cecum found and appendix exposed; adhesions and shortened stumpy appendix with contracted meso-appendix indicated that some of the right-sided pain had been caused by appendicitis. The appendix was twisted so that the meso-appendix could be included in the grasp of the blades of the electrothermic forceps. The current was turned into the blades for twenty seconds, the forceps allowed to remain on for forty seconds and the stump after section allowed to drop into the abdomen. This is the first case that one application of the forceps included the appendix and meso-appendix, and the third in which no additional purse-string suture was applied.

CASE 19.—Application of electrotherm to twenty artery forceps to control twenty bleeding points after removal of the breast by the Halsted method.

CASE 20.—Electrothermic angiotribe to hemostase and remove hemorrhoids. No bleeding and little or no pain followed.

While the number of cases reported here is small, the variety is such as to indicate greater practicability for the method than is generally known. The great success attending the application of sterile ligature material in the hands of men doing a large amount of abdominal surgery, may be used as an argument against its adoption or necessity. The use of so much and so complicated armamentarium, it will be argued, will counterbalance any increased safety as regards secondary hemorrhage. My experience proves it offers many advantages independent of hemostasis. There is much greater freedom from pain following section than after the older operative measures. The three post-mortems made show little or no adhesions of bowel surface to the agglutinated sterile non-adhering stumps. When we consider the great number of cases with intestinal adhesions secondary even to aseptic operative work and the suffering entailed therefrom, there is reason to seek for better methods.

While many men advocate the isolation and ligation of the separate blood vessels and their covering by peritoneum as many others still use mass ligation. There is no comparison in the relative advantages of mass ligation and mass electrothermic pressure. By the latter the stump is painless, non-adherent; its lymphatics are sealed and its mass reduced to the smallest possible bulk. But even isolated arteries, as the ovarian and uterine, may be occluded by this method and more quickly than by ligation. There is no abdominal or pelvic operation or particular method of operating in which the ligature is used that this hemostatic procedure can not be used. It is possible to do hysterectomies almost without seeing blood within the abdominal incision. By using the wide angiotribe we may make section within the compressed area, rendering unnecessary forceps to the uterine sides. In operating then the only blood we need see in the pelvis is where we sever across the cervix. The pedicle of an ovarian cyst may not be even tinged on section. In the removal of each appendix reported no blood was seen. A thin white area near the head of the appendix and in the meso-appendix and section through these areas indicates how it can be bloodless. While I have been timid of leaving the stump without other treatment, with my last instruments, which give the proper pressure, I believe it practicable. Dr. Rosenberger, pathologist of St. Joseph's Hospital, in reporting on an appendix, wrote, "upon microscopic examination the area of the clamped portion shows entire obliteration of the mucous, submucous and muscular coats. The opposite serous coats seemed to be in apposition." This means that an area of homogeneous agglutinated tissue forms the stump.

In conclusion, I wish to state that this paper is a preliminary one. I am only one of the early workers in this field. I have given a great deal of attention and time to the study of the method and the development of the instruments.

DISCUSSION.

DR. FRANKLIN H. MARTIN, Chicago—I congratulate the Doctor upon his paper and his ingenious improvement on the Skene instrument. When Dr. Skene showed me his outfit, I remember the point was made that they were imperfect because they would become exceedingly hot and he forecast these improvements at that time. Combining heat with pressure is certainly an advantage, and the author seems to have accomplished that combination. I think no one will doubt or criticise the conclusions arrived at by the author that this instrument will enable us to accomplish hemostasis anywhere, and that it will enable us to dispense with ligatures, either permanent or absorbable. The short time necessary to heat this instrument possibly would count for something, but I do not believe that even a rapid operator will be able to secure each point in a shorter time than ten seconds.

DR. G. B. MASSEY, Philadelphia—If you consider the physics carefully, you will see that Drs. Skene and Downes have made a mistake in calling this an electrothermic cautery. The fact that a white color follows its use is an important point. Heat applied to the human body never turns the tissues white; it turns them black. It converts the carbon in the body into charcoal. In this instrument we have powerful electrolysis. It probably did not occur to Dr. Skene that he could get so much electrolysis from only four volts, but you have 60,000 milliamperes going through the tissues for a second. The laws of physics prove that an electrical current going through moist tissue always causes decomposition. It can not go through by conduction, but by electrolysis. I think Dr. Martin will bear me out in that.

DR. MARTIN—The electricity does not pass through the tissue, as it does not pass from one blade to the other, and therefore you do not get electrolysis. You simply get the heat of the blade.

DR. MASSEY—This may be so, as I have not had an opportunity yet to examine the instrument.

DR. EMIL RIES, Chicago—I was interested by the Doctor's statement that the application of this instrument is sufficient to make the tubes impermeable. You remember that when Skene published his book about this electro-hemostasis, he referred to some research I had made on the patency of the tube after salpingectomy. He also made some experiments on the appendix, but unfortunately I never had a chance to see his specimens. The descriptions in the book are incomplete, because he says nothing concerning the condition of the appendix some time after the operation. He mentions that the instrument would be sufficient to close up the tube in a salpingectomy. It is found impossible to close the tube by a ligature of any kind except by folding the peritoneum over the end of it. I should like to have the Doctor tell us about his experiments and the result of his examination of the tubal stump after the use of this instrument.

DR. JOSEPH EASTMAN, Indianapolis—It has occurred to me that possibly the sharp edge on this instrument is an objection because it might cut through tissue and thus produce a hemorrhage. Would it not be better to have the edges rounded, so that the line between the compressed and desiccated and the healthy tissue would not be so abrupt?

DR. J. WESLEY BOVÉE, Washington—I would like the Doctor to tell us what conditions he has found in these cases after the operation, as regards the presence of adhesions.

DR. HENRY P. NEWMAN, Chicago—It is not necessary to apply the angiotribe for three minutes, as stated by the essayist, if a proper instrument of 3000 pounds pressure is used; one minute is usually sufficient. The instrument is therefore (instead of being a time-consumer) an expeditious means of operating upon the broad ligaments or other soft tissue amenable to its use. That the means of hemostasis has been unsatisfactory is evidenced by the introduction of the ecraseur, the retention forceps, the absorbable suture, and more lately the electric-heat apparatus of Skene, and the angiotribe. All of which are indications that the surgeon wishes to get away from the time-honored conventional ligature. The angiotribe has certain definite indications and when appropriately used will be found most satisfactory. The essayist's instrument seems well adapted to certain selected cases, and I see no reason why it should not prove highly satisfactory, providing the instrument is carefully made and reaches the requisite degree of compression.

DR. DOWNES, closing—The electrothermic angiotribe compresses about one-third of an inch of tissue. I have examined it microscopically and found a homogeneous mass, no mucous membrane, no blood-vessel, no nerve. About one-sixteenth inch beyond the compressed end is a coagulation necrosis due to extension of the heat. It is a buffer which causes clotting. There is absolutely no evidence of any histological structure in the compressed area. One of the objections to the angiotribe is that it cuts tissue, but we can apply it carefully, and with this method you can apply it slowly, turning on a little heat and then compressing it. If it should crush, you must include the point crushed. That might occur in an extrauterine pregnancy, in softened infiltrated tubes, and, as in a case of puerperal sepsis I had, where both tubes and ovaries and the uterine walls contained pus, six weeks after a septic labor. I used this instrument, cutting right through, but the blood-vessel was in the compressed area. I felt that her recovery was due to the fact that, without ligatures, I had produced a complete hemostasis. There were two essential objections to Dr. Skene's instruments: one was that they did not give enough heat; and the other, not enough pressure. Therefore, it required much time, three minutes, for heavy pedicles. My first instrument was stronger than Dr. Skene's, but at a point near the center it would not compress because the blades did not meet. I used it twice and in the center of the tissue found an artery not compressed. I modified the instruments until I now have them, I believe, nearly perfect.

This method has nothing to do with electrolysis. It has nothing to do with electricity, except as an agent. The electric current goes into the instrument, into a resistant metal, to give heat by the resistance of that metal to electricity. If you can get any other agent that will give heat it will be just as good as the electricity. I do not know of an instance where this instrument will not safely supplant the ligature. I removed a breast by Halsted's method and rapidly hemostased all blood vessels. The insulation is affected by mica. I am rather timid of pressure alone, and, therefore, have not used the cold angiotribe, but I can turn any angiotribe into this apparatus. I have had three deaths, but they had nothing to do with hemostasis. I have performed an autopsy and found the stumps sterile, white and sweet. I am inclined to believe that there is no such thing as adhesion following the stumps left by this method. The point of contact is sealed and exudes nothing that would make it adherent.

AN EXHIBITOR of Roentgen apparatus in Berlin developed a typical, chronic *x*-ray burn on one hand, which recently became gangrenous and the prompt amputation of the entire member was unable to avert the fatal termination.

A NEW OPERATION FOR RETRODISPLACEMENT OF THE UTERUS.*

EMIL RIES, M.D.
PROFESSOR OF GYNECOLOGY, POST-GRADUATE MEDICAL SCHOOL, CHICAGO.

The vaginal route for operations on uterus and appendages, aside from hysterectomy, is recognized at present by a large number of gynecologists as a safe and convenient method, and is considered by them preferable to the abdominal route wherever it appears applicable. After long and exhaustive discussions the following advantages may be regarded as peculiar to the vaginal route in preference to the abdominal incision:

1. The vaginal route exposing only a limited portion of the abdominal cavity is less liable to lead to infection or so-called shock.

2. The vaginal route, requiring no exposure or handling of intestines or omentum or parietal peritoneum to any extent, avoids the post-operative troubles liable to follow such exposure or handling—adhesions with their consequences, loss of water from evaporation with the disagreeable subjective symptoms caused by it.

3. The vaginal route does away with the visible scar and the possibility of ventral hernia.

4. The vaginal route excludes the possibility of long confinement due to wound suppuration.

5. Operations by the vaginal route are followed by a very short detention of the patient in the hospital.

6. The after-treatment of vaginal operations is extremely simple and the patients are able to resume their work very early.

These advantages of the vaginal route were pointed out from the beginning of its use by Duehrssen and Mackenrodt. These authors used the vaginal route first in the treatment of retrodisplacement of the uterus. The vaginal route for operations on the uterine appendages and the uterus, aside from displacement of the uterus, was an early offspring of their original methods, an offspring which by its valuable adaptability soon threatened to overshadow the original idea. For while the use of the vaginal celiotomy spread and increased, the original vaginal operation of vagino-fixation, as used by Duehrssen and Mackenrodt, began to show serious after-effects. Though the vagino-fixation in itself was comparatively simple and the operative recoveries were rapid and uneventful, the remote results soon proved disappointing, even sometimes disastrous. If the operation was done so as to leave to the uterus a certain degree of mobility, recurrence came early and in numerous cases. If, on the other hand, the uterus was made firmly adherent, the adhesions proved a serious detriment in subsequent pregnancies.

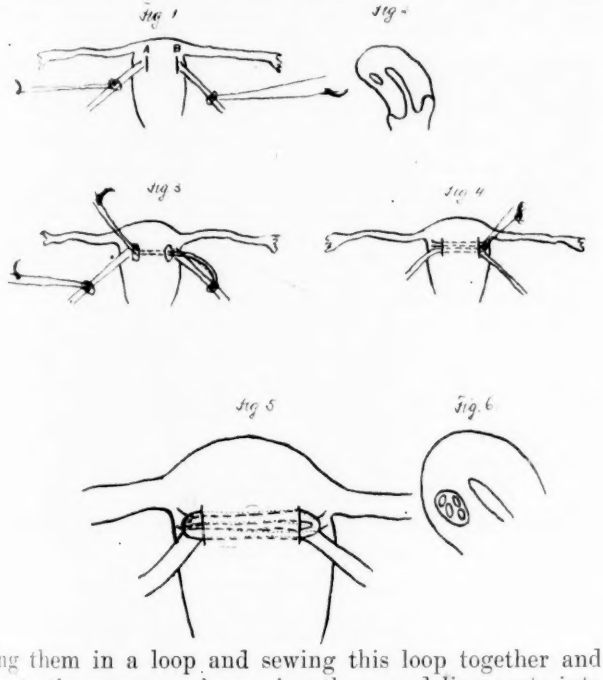
As the general principle of the vaginal operation was desirable, various modifications were tried in order to avoid the disappointing remote results while preserving the advantages of the vaginal route. Intra-peritoneal fixation, extra-peritoneal fixation, fixation above the internal os, and below it, vesico-fixation, all were tried and found wanting. A large number of gynecologists wanted to abandon the vaginal operations for retrodisplacement altogether. In consequence of some confusion as to the terms vaginal celiotomy and vaginal fixation, some went so far as to condemn the vaginal

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

celiotomy together with vagino-fixation. However, the splendid results of the vaginal celiotomy, reported from all parts of the world, placed this operation securely among the best acquisitions to modern gynecology.

At this time (about 1896), though vagino-fixation continued to be the method of choice in the hands of a few, others tried to find such improvements as might recommend anew the vaginal route for the treatment of retrodisplacement. The methods which were the outcome of these endeavors are the methods of shortening the round ligaments as devised by Bode, Wertheim, Vineberg, and a method of shortening the sacro-uterine ligaments as devised by Wertheim and used by him in combination with the shortening of the round ligaments through the vagina.

While the method of shortening the sacro-uterine ligaments does not seem to have gained many friends, the methods of shortening the round ligaments through the vagina were used to a considerable extent in Europe as well as in America. The principle of these methods was to shorten the round ligaments either by folding them in a loop and sewing this loop together and on to the uterus or by sewing the round ligaments into the vaginal wound.



Both of these methods were used in my personal work up to 1898, but on one hand I met with some technical difficulties and on the other hand the remote results were not absolutely perfect.

When the operation of shortening the round ligaments was done by folding them in a loop and fixing this loop by sutures, it was found, especially where the vagina was small, that the suturing was at times difficult, if it was done while the uterus was in the peritoneal cavity. If on the other hand the ligaments were sutured to the fundus of the uterus, while it was displaced into the vagina, it was found that on attempting to replace the uterus into the peritoneal cavity, there was either difficulty in replacing the uterus or the ligaments and the stitches were put on a considerable stretch during this act of the operation. The operation performed in this way produced adhesions between the serosa of the round ligaments and the serosa of the uterus. The result was a sero-serous union which, as is sufficiently known from intra-abdominal work in general, is apt to give way. The examination of the patients months or years after such operations did not fail to reveal this undesirable instability of sero-serous adhesions.

If the round ligaments were shortened by sewing them into the vaginal wound, it was to be feared that the short piece of round ligament between the uterus and the vaginal incision might not become sufficiently elongated in the case of a subsequent pregnancy and thus give rise to similar troubles as the original vagino-fixation.

Another objectionable feature was observed whether the ligaments were sutured to the uterus or to the vagina: When the round ligament was pulled down into the wound for the purpose of suturing it into its new position; it was seen that the tube near its insertion in the uterus was bent at a more or less sharp angle. This formation of an angle or kink in the tube is the natural consequence of the anatomic arrangement by which the peritoneum which covers the round ligament can not be pulled downwards or inwards to any extent without also pulling on the peritoneal coat of the tube. This kink threatened to interfere with the physiologic function of the tube and though I had no positive evidence by which to prove damage due to the kink in the tube I tried to improve on these methods.

The desirable points which the new method was intended to embody were the following:

1. A vaginal operation which would allow of all necessary operations on the appendages at the same time and through the same incision with that for the treatment of the retrodisplacement.

2. An operation that would preserve the mobility of the uterus so as not to interfere with possible pregnancy.

3. An operation that would not depend on sero-serous adhesions, as these had proved unreliable.

4. An operation that required as little suturing as possible in the peritoneal cavity and still would leave no raw surfaces that might give rise to adhesions.

5. An operation that would not interfere with the physiologic function of the tube.

The operation which I have devised and which meets the above mentioned five requirements had been done by me the first time, Jan. 13, 1899, and I have done it since on 20 patients, all of whom have recovered. The operation was first published in a paper read before the Chicago Medical Society,[1] Oct. 4, 1899. The operation is performed in the following way:

The patient is placed in lithotomy position and catheterized. A volsellum is placed on the anterior lip of the cervix. The uterus is dilated, irrigated with bichlorid, curetted and again irrigated, but not packed.

In front of the cervix a convex incision with the convexity towards the external orifice is made down to the uterine tissue. The bladder is then pushed away from the uterus until the fold of the peritoneum of the vesico-uterine pouch is reached. Then this fold is pulled down, taken hold of with two artery-forceps and incised between the two. Thereby the peritoneal cavity is opened. Now the volsellum which so far had pulled down the uterus, is pushed into the hollow of the sacrum and therewith the cervix shoved backwards and upwards. The fundus of the uterus is thereby made to come down into the vaginal incision and can be grasped with a volsellum and delivered into the vagina. Now

1. Chicago Med. Recorder.

the volsellum which held the cervix is removed, the uterus being held only by the vosellum in the fundus, the appendages are now delivered into the vagina and whatever operation has to be done upon them is performed and the rest is returned into the peritoneal cavity.

Now the right round ligament is taken hold of at the necessary distance from the uterus and pulled down into the vagina. With a blunt instrument it is detached from the peritoneal fold which binds it to the broad ligament to the length of about four centimeters from its point of insertion in the uterus. Now a catgut suture is passed first through, then around it, but not tied. The needle is left on the thread and needle and thread are temporarily held in an artery forceps. The procedure is then repeated on the opposite side (Fig. 1). Now a small, pointed knife is pushed through the anterior wall of the uterus from the point of insertion of one round ligament to the point of insertion of the opposite ligament (Fig. 1. A B). A tunnel is thereby made in the anterior uterine wall midway between the uterine cavity and the peritoneal coat of the body of the uterus (Fig. 2). Now an artery-forceps is passed from the left opening of the tunnel through the tunnel until it emerges at the opposite end of the tunnel. The needle and thread which hold the right round ligament are grasped in the artery-forceps and pulled through the tunnel until needle and both ends of the thread appear outside the left mouth of the tunnel. Again the needle and thread are held temporarily in an artery-forceps. Now an artery-forceps is passed through the tunnel from right to left and the needle and thread holding the left round ligament are grasped and carried through the tunnel (Fig. 3). When they emerge from the right mouth of the tunnel they are again secured in an artery-forceps. At this stage of the operation the two threads which hold the ligaments are crossed in the tunnel and the uterus is still in the vagina.

At this point the uterus is returned into the peritoneal cavity with the volsellum still holding on to the fundus. Now by pulling on the two threads the round ligaments are pulled into the tunnel in opposite directions (Fig. 4) and thereby the uterus pulled forwards as far as desirable. The threads are now held taut and the volsellum forceps is removed from the fundus. The needle which holds the thread on the left round ligament is now passed through the lips of the right mouth of the tunnel and the needle which holds the thread on the right round ligament is passed through the edge of the left opening of the tunnel. The stitches are then tied and cut short. With these two stitches the ligaments are fastened and at the same time the tunnel is closed so that no raw surface remains in the peritoneal cavity (Figs. 5 and 6). Now the edges of the peritoneum are united by continuous catgut suture and in the same way the edges of the vaginal incision are brought together.

Certain modifications of this technique are made under special conditions. For instance, where a cystocele complicates the retroversion, the first incision is made V-shaped and a flap of vaginal tissue as outlined by the V is dissected up and afterwards removed completely for the purpose of the anterior colporrhaphy Where the uterus is imbedded in numerous and firm adhesions, it is sometimes impossible to deliver it without a previous posterior colpotomy through which the posterior adhesions are broken up. It has happened to me once, that when I tried to pull the ligament into the tunnel, it was torn. In this case I took the distal end of the ligament and pulled it through the tunnel and disregarded the uterine end entirely. Where the retrodisplacement is associated with a fibroid in the anterior uterine wall and where the fibroid has been enucleated, the ligaments, instead of being passed through a specially made tunnel, may be inserted into the cavity resulting from the removal of the fibroid.

The after-treatment is that of all vaginal celiotomies, as I have described it at the meeting of the American Medical Association in Columbus.[2] The patients leave the hospital as a rule at the end of a week.

Fourteen of my cases were operated on during 1899 and 1900. Seven of the patients live at more or less considerable distances from Chicago and could not be examined. Seven patients have been re-examined recently and in all of them the uterus was found movable and in good position. One case, the first one operated upon, is particularly interesting, because in this case, aside from the adhesions which held the uterus in retroversion, there was occlusion of both tubes which was treated by bilateral salpingostomy. The patient conceived three months after the operation, went through her pregnancy without any difficulty and gave birth to a healthy, living child. She was examined again after the birth of the child and the operation had stood this supreme test of all operations for retrodisplacement. The uterus was found in good position about three months after the confinement.

The operation described here is easily performed and easily combined with all kinds of operations on uterus, appendages, vagina and perineum. It involves very slight loss of blood. It leaves a movable uterus. It produces a sero-fibrous union between uterus and round ligaments. It requires only two stitches in the uterus after the organ is replaced in the peritoneal cavity. It does not kink the tube.

100 State Street.

SURGICAL TREATMENT OF RETROVERSION OF THE UTERUS.*

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CHICAGO.

Two operations have become established in surgery as procedures of necessity in the successful treatment of persistent retroversion of the uterus. One is the operation of shortening the round ligaments of the uterus in the inguinal canal or the Alexander operation; the other that of fixing the uterus by some means to the abdominal wall through a laparotomy incision, or the operation of ventral fixation of the uterus.

THE ALEXANDER OPERATION.

The names of Alquie, of Montpellier, Alexander and Adams, of England, should be inseparably coupled with the inception of this operation. Alquie,[7] the Frenchman, conceived the idea and presented a memorial to the Academy of Medicine, Nov. 17, 1840. No operation had been performed. Alexander,[2] of Liverpool, performed his first operation. Dec. 14, 1881, but did not publish until January, 1883. Adams,[3] of Glasgow,

2. THE JOURNAL A. M. A.

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee of the Section: Drs. A. H. Cordier, W. E. B. Davis and Henry P. Newman.

operated independently two months later than Alexander, but published more than six months earlier.

From the first the operation has been held in varying favor by the profession. It has been condemned on theoretical grounds by those to whom the operation has not sufficiently appealed to lead them to make a trial of it, but has been almost universally approved by those who have given it a fair test by actually familiarizing themselves with the results of the procedure in actual personal operating.

Many modifications of the technique of the operation have been made by a number of operators since the operation was first given to the profession. These attempts at improvement demonstrate that the original technique has not been entirely satisfactory. The weakness and smallness of the ligament at the external ring, making it difficult of recognition at that point, has led a number of operators to make the incision over the internal ring and attack the ligament at that location, among them being Kellogg and Newman.

The unyielding external pillars have led operators to seek less solid tissues to which to attach the ligaments.

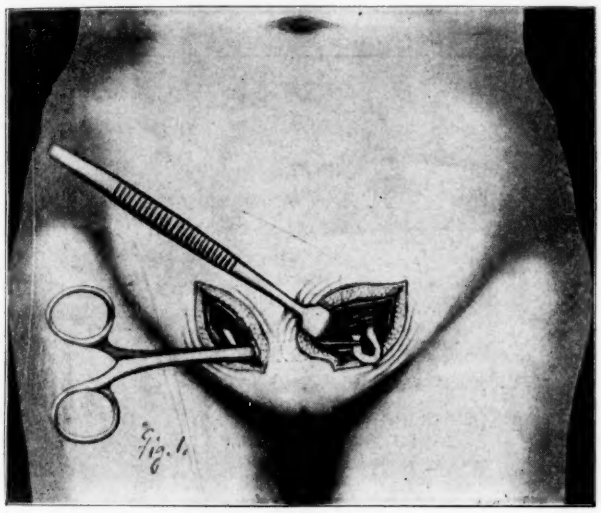

Figure 1.

The occasional subsequent infection of silk, silkworm gut and any form of permanent suture material for fixing the round ligaments, leading frequently to troublesome fistulæ, caused operators to abandon the permanent suture for an absorbable one, as kangaroo tendon of catgut.

In order to unite the ends of the ligaments, Casati,[4] of Rome, joined the lower ends of the ordinary lateral wounds by a curved incision between their lower ends, crossed the ends of the incised ligaments and fixed them with continuous catgut ligature. Doleris[5] accomplished the union of the ligaments by drawing one beneath the skin and subcutaneous tissues to the opposite wound and there uniting it to its fellow and the pillars of the external ring with catgut. Sigond[6] secured the ligament after drawing it taut in the superior angle of the wound with silk and then tied the free end of the ligament to the external pillar lower down through small longitudinal incisions in their margins and thus closed the ring solidly with the ligament. Goldspohn[7] seeks to extend the limitations of the operation by first breaking up adhesions which may exist in the pelvis, or to remove the minor pathologic conditions of the appendages, when necessary, through the dilated internal ring before proceeding to shorten the ligaments; also Buettner, of Geneva, and Edebohls, of New York.

February 13,[8] 1896, I did an Alexander operation by what I considered an original method, and described it before the Chicago Gynecological Society, Feb. 21, 1896, as follows: To avoid the use of buried sutures of any kind, and at the same time to get perfect and more reliable shortening of the ligaments than is possible with any form of suture, I adopted the following method in a case operated on at the Woman's Hospital, February 13. I made the ordinary incision of one inch and a half on either side, beginning half an inch inside of the spine of the pubes and extended it in the direction of the anterior superior spine of the ilium. The lower ends of the incisions were about an inch and a quarter apart. I exposed the round ligaments, freed and drew them out, each having a superabundance of about two inches and a half. I then passed a closed pointed artery forceps from the bottom of the lower end of the wound on the right side beneath the suprapubic tissues to the corresponding point in the lower end of the wound on the left side, grasped the round ligament of the left side in the forceps, and, by withdrawing the instrument,

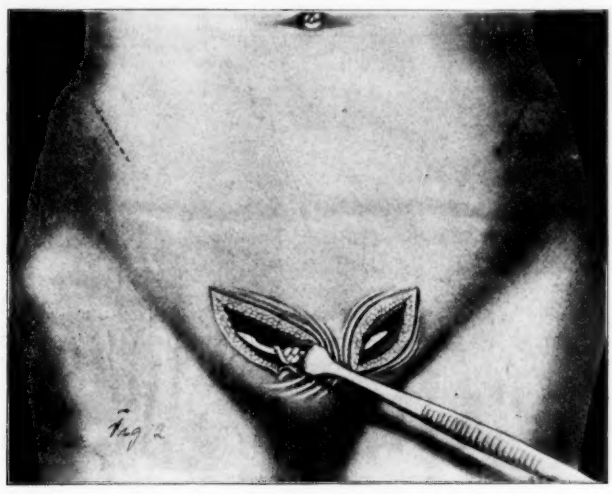

Figure 2.

brought the left ligament beneath the skin, fat and superficial fascia, between the lower ends of the wounds to the lower end of the right wound. (Fig. 1.) I next freed the pubic attachments of both round ligaments, drew the uterus well forward by drawing taut the two ligaments, and then securely fastened the ligaments by tying them together with a double knot directly over the center of the pubes, accomplishing this by drawing the edges of the wound strongly to the left (Fig. 2) and then allowing the tissues to retract and bury the knot beneath the subcutaneous tissues of the mons veneris. This procedure shortened the ligaments thoroughly and at the same time fixed them. (Fig. 3.)

I now close the external ring with interrupted catgut sutures and close the skin with a subcutaneous silver-wire suture, which is subsequently removed.

In the discussion of my paper, Dr. H. P. Newman brought out the fact that practically the same operation had been performed and described by Dr. F. C. Bachelor,[9] of New Zealand, in 1894. To my surprise I discovered this to be true. This, however, has not deterred me from continuing to perform this operation, and with the utmost satisfaction, for the following reasons: 1. Because it insures a uniform shortening of the

ligaments. 2. It insures a permanent and strong fixation of the ligaments. 3. It accomplishes this result without the necessity of placing sutures of any kind, temporary or permanent, for the purposes of fixation and shortening. 4. It eliminates the possibility of fistulous tracts being established, because of the infected deep permanent suture, and obviates the occasional suppurating wound due to the buried absorbable suture. 6. It seldom gives rise to any pain at the point of attachment of the ligaments, like that frequently complained of when the ligaments are attached separately by a permanent suture.

As a part of this report, I present a table including 61 cases of the Alexander operation performed by this method. The record extends from Feb. 13, 1896, to Dec. 29, 1900, a period of nearly five years. The following is the summary of this report:

SUMMARY OF REPORT OF THE ALEXANDER OPERATION.

Between Jan. 1, 1896, and Jan. 1, 1901, a period of five years, I have operated on 61 cases of retroversion by the method I have described. I have been extremely careful in selecting my cases, as this comparatively small

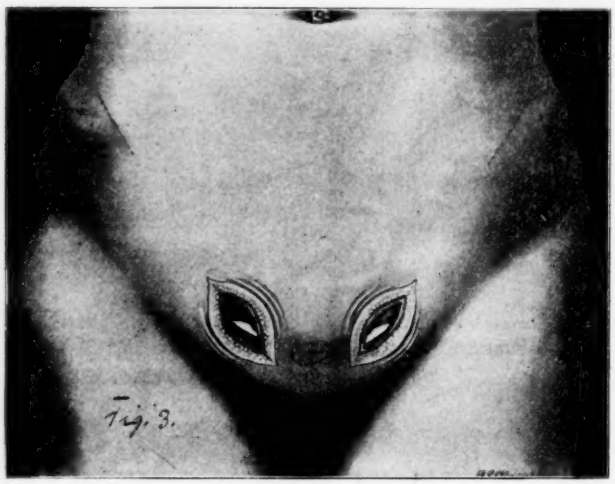

Figure 3.

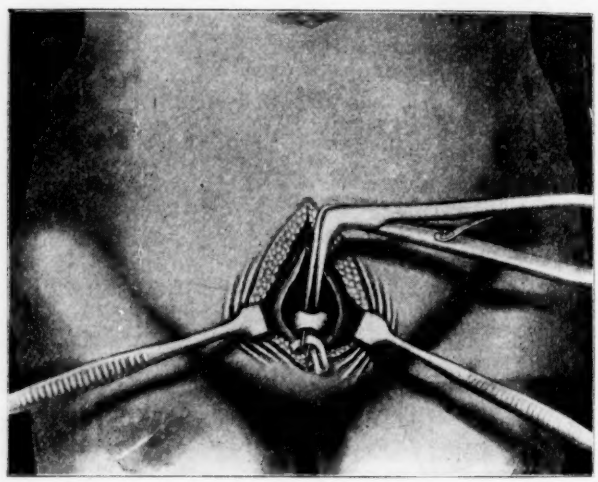

Figure 4.

number would indicate, and my uniformly favorable and gratifying results undoubtedly are due to this careful selection fully as much as to the method of operating.

On Jan. 1, 1901, I communicated by letter with as many of these patients as I could reach, and requested that they report in person at my office, or when that was impracticable, to their family physician, or at least to state to me the condition of their health since the operation. By this correspondence, and in other ways, I have been able to get some kind of a report on 34 of the 61 cases. My records show that the other 27 cases were in perfect condition when they left the hospital.

From 34 cases I received letters, reports from family physicians, or in the majority of the cases had personal interviews and examined the condition of the pelvis. These reports were obtained from five to one quarter years after the operation. There was one failure to accomplish a tying of the ligaments, because of one ligament breaking, and the ligaments were secured to the external rings with silkworm gut sutures. The operation was successful. In case 31 the ligaments were exposed and when stripped were so small that I abandoned the Alexander for a ventral fixation.

Of the 32 remaining, which I examined, all are reported well. One after 5 years; three after 4 years; six after 3 years; thirteen after 2 years, and nine less than 2 years.

There have been 7 cases of pregnancies reported. Of these 6 have progressed and terminated as perfectly normal cases. One case aborted at the fourth month without apparent cause. Case 7 was confined two years after the operation. An examination one year after the confinement demonstrated the uterus in normal position. Case 8 was confined two years after the operation and the uterus was in perfect position two years after the confinement, as shown by bimanual examination. Case 18 was confined two years after the operation. One year afterwards the uterus remained normal. Case 22 was confined two and a half years after the operation. The perineum was lacerated. The uterus remained in position. Case 28 gave birth to a full-term child eight months after the Alexander operation and an operation for repair of the perineum. The pregnancy was not suspected at the time of the operation. Case 41 was confined two years after the operation. The uterus still remains in perfect position. Case 54 is the one reporting the four months' miscarriage one and a half years after the operation. The uterus remained in position after the miscarriage.

There is no operation in surgery which gives me more genuine satisfaction than this one of Alexander. Chronic retroversion is one of the most distressing of walking diseases. While it makes of its subjects miserable invalids, they are still well enough to be expected to drag about on their feet. The Alexander operation relieves instantly. The operative procedure is simple, does not remove important organs, simply restores original conditions, and the results of accomplishing restoration to perfect health often appear miraculous to the sufferers.

VENTRO-SUSPENSION OF THE UTERUS.

Koerbele,[10] from observing that the uterus was influenced in its position in the pelvis from the attachment of the tumor pedicles in the abdominal incision after laparotomies, conceived the idea of fixing a portion of the uterus or its appendages in the abdominal incision as an operation of election for retrodisplacement of the uterus, consequently he was the first to execute such an operation, on March 27, 1869, when he stitched the pedicle of an excised ovary in the lower angle of an abdominal incision. Sims,[11] Feb. 22, 1875, cured a patient with persistent painful retroflection by practically the same operation as that employed by Koerbele. Schräder[12] reported in 1879 a similar operation. Feb. 20, 1880, Lawson Tait,[13] on closing an abdominal wound after removing the appendages in a case complicated with retroversion, allowed the sutures employed for closing the abdominal incision to include the fundus of the uterus and thus deliberately accomplished ventral

fixation. He reported this case and another done in April, 1880, as cured in 1883. Sanger[14] reported that Hennig performed this operation in 1881.

The operation of ventro-suspension of the uterus will always be inseparably connected with Ohlshausen, of

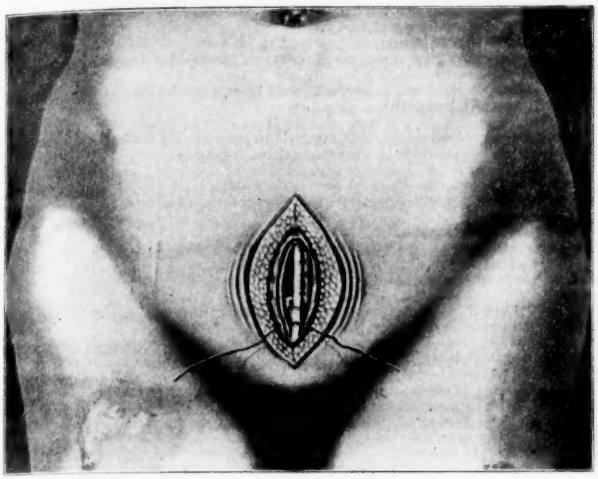

Figure 5.

Berlin, and our own Kelly, of Baltimore, for having the genius of proposing, executing and describing a systematic operation. Professor Ohlshausen[15] was fortunate in publishing first, Oct. 23, 1886. Kelly,[16] while

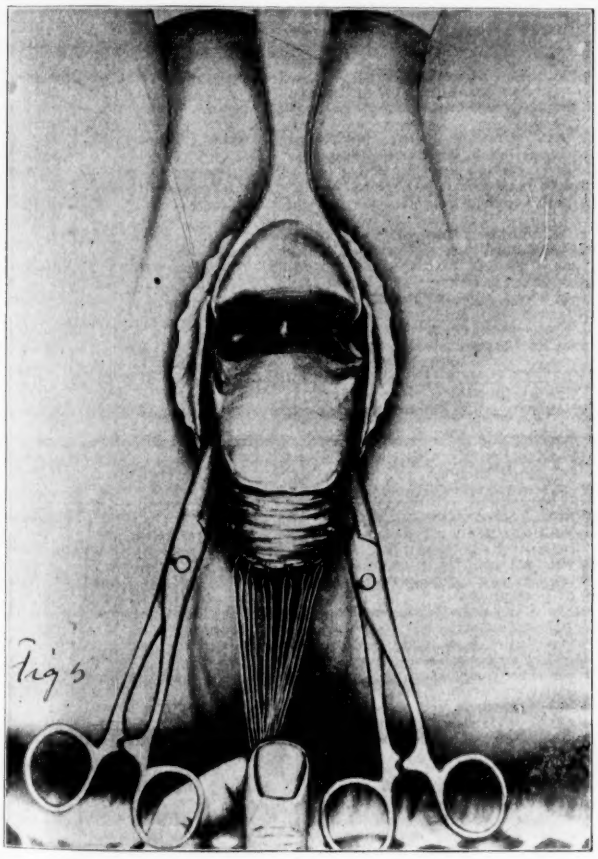

Figure 6.

having the subject under consideration for some time and operating April 25, 1885, did not publish until January, 1887. Too much praise can not be given to Kelly for having the persistency to bring into prominence by his many articles this very practical operation.

From these pioneer operations many unimportant and a few important modifications have been made. From the large grist of experience one may draw a number of important lessons. I think that the following are a few of the lessons which may be drawn from this abundant experience: 1. A ventral suspension which does not depend on some form of a permanent suture or method of direct fixation and must depend on the uncertainties of unsupported adhesions between the uterus and its appendages and the parietal peritoneum will frequently fail to afford permanent suspension. 2. Experience shows that while silk, silkworm gut, or silver wire give permanent results they will occasionally give rise to fistulous tracts and prolonged convalescence, with secondary operation for removal of the dead and septic sutures.

The above facts have led surgeons to seek means of avoiding the use of absorbable suture and substituting

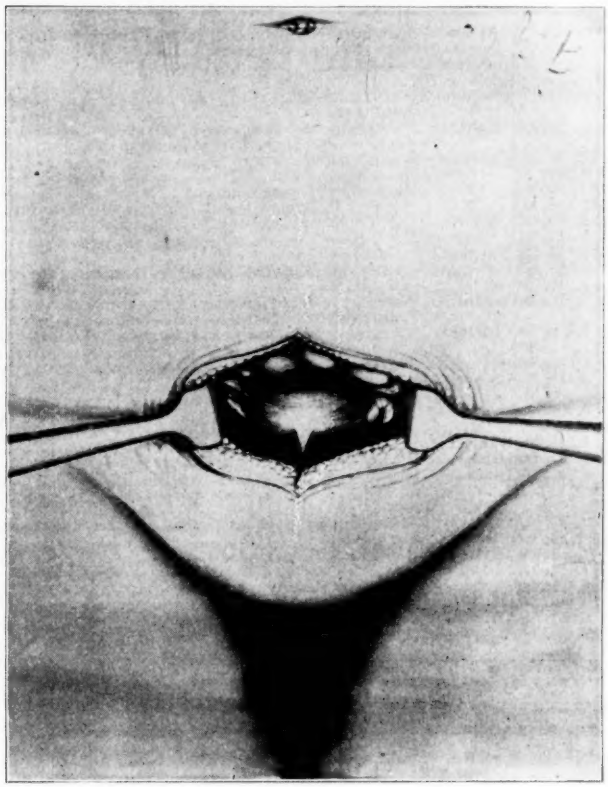

Figure 7.

something for the permanent dead suture. One of the most ingenious and at the same time most rational modifications, to my mind, for overcoming the above difficulties was that made by Dr. George R. Fowler,[17] in which he substituted for all sutures a suspensory ligament or suture from the patient's own living tissues, by suspending the uterus on the urachus. This operation appealed to me as a distinct advance and I adopted it in a number of cases, until I discovered that the scope of its principle might be decidedly advanced by utilizing a strip of peritoneum instead of the urachus.

My reasons for abandoning the urachus for a strip of peritoneum, I think will be admitted, are well taken. They are as follows: 1. The urachus is a subperitoneal structure of great firmness, which makes a solid fixation of great strength and, therefore, makes it inapplicable for a means of suspension where subsequent pregnancy is possible. 2. In about twenty-five per cent. of cases

ALEXANDER'S OPERATION.

No.	Date.	Residence of patient.	Additional operations.	Result, date of last examination.	Hospital.
1	2, 13, '96	Chicago. .	Curettement, trachelorrhaphy, perineorrhaphy	Perfect when left hospital; no subsequent report or ex. . . .	Woman's.
2	5, 7, '96	"		Perfect when left hospital	"
3	6, 4, '96	"	Curettement, trachelorrhaphy, perineorrhaphy . .	Ex. in '98; result found perfect	"
4	6, 18, '96	"	Dilating, curettem't, trachelorrh., perineorrhaphy	Ex. 1 year afterward; showed perfect condition	"
5	8, 22, '96	"	Curettement, perineorrhaphy	Perfect condition when left hospital	P. G.
6	9, 7, '99	"	Curettement, perineorrhaphy, trachelorrhaphy . .	Ex. Feb., 1901; shows uterus in perfect position	Woman's.
7	9, 8, '96	Kansas. . .	Currettement, perineorrhaphy	Health good; baby 2 yr. ago; no laceration; nursed this child first she could.	P. G.
8	11, 11, '96	Iowa. . . .	Perineorrhaphy	Dec. 15, ex. shows uterus in perfect condition; child 2 yr. ago.	Charity.
9	11, 24, '96	Chicago. .		Perfect when left hospital	"
10	4, 1, '97	"		" " "	Woman's.
11	4, 9, '97	Indiana. .		Jan. 29, 1901, ex. showed perfect condition; could not be better	"
12	4, 9, '97	Wisconsin.	Dilation, curettement	Perfect when left hospital; no subsequent report or ex . . .	"
13	4, 13, '97	Chicago. .	Perineorrhaphy	" " "	Charity.
14	4, 28, '97	"	Nephrorrhaphy	Ex. 2 years afterward; showed perfect condition. . . .	P. G.
15	5, 25, '97	"	Perineorrhaphy	Ex. 3 yrs. after; perfect health; 1901, perfect condition . . .	Woman's.
16	5, 25, '97	So. Ill . .	Curettement	Perfect health	"
17	6, 28, '97	Chicago .		Perfect when left hospital..	P. G.
18	7, 21, '97	"	Curettement, perineorrhaphy	Child uncomplicated in 1899; perfect health since.	Woman's.
19	7, 21, '97	"	Perineorrhaphy, trachelorrhaphy	Ex. 2 yrs. afterward; shows perfect condition	"
20	7, 26, '97	"	Trachelorrhaphy, perineorrhaphy	Perfect when left hosptial	Charity.
21	8, 22, '97	"	Curettement	" " "	P. G.
22	9, 27, '97	"	Curettement, perineorrhaphy	Well until April 27, 1900; delivered of a child; lacerations resulting in prolapsus of the bladder.	Charity.
23	9, 14, '97	"	Curettement, trachelorrhaphy, perineorrhaphy . .	Ex. Dec. 8, 1900, shows wound tender; uterus in perfect posit'n	Woman's.
24	10, 4, '97	"	Curettement..	Perfect when left hospital..	P. G.
25	10, 20, '97	Tennessee.	Curettement, perineorrhaphy	Jan. 4, 1900, perfect health	Woman's.
26	10, 25, '97	Chicago. .	Curettement, perineorrhaphy, trachelorrhaphy . .	Not perfect..	Charity.
27	10, 26, '97	Minnesota	Curettement, perineorrhaphy..	Oct., 1900; was in good health; uterus in perfect position.. . .	Woman's.
28	11, 6, '97	Nebraska..	Curettement, perineorrhaphy..	General health good; baby boy 8 mo. after opera.; position of uterus perfect.	"
29	11, 8, '97	Chicago. .	Perineorrhaphy	Perfect when left hospital..	Charity.
30	11, 15, '97	"	Curettement	" " "	"
31	11, 22, '97	Michigan .	Curettement, perineorrhaphy, trachelorrhaphy; abd. sect.; ventral fixation strip of p.	" " "	P. G.
32	11, 29, '97	Chicago. .	Curettement	" " "	Charity.
33	11, 29, '97	"	Curettement	" " "	"
34	11, 30, '97	"	Vag. sect; l. sal. os	One year after, perfect condition	Woman's.
35	12, 6, '97	"	Curettement, perineorrhaphy, trachelorrhaphy . .	Patient writes she is well	P. G.
36	12, 20, '97	"	" " "	Perfect when left hospital	Charity.
37	1, 17, '98	"	" "	Perfect when left hospital; no subsequent ex. or report . . .	"
38	2, 24, '98	Indiana. .	" "	Eighteen months after operation, in perfect health	Woman's.
39	2, 27, '98	Chicago .	Curettement, perineorrhaphy, trachelorrhaphy . .	Ex. Dec 6, 1900, in splendid condition.	"
40	4, 11, '98	So. Ill . .	" "	Perfect when left hospital	P. G.
41	4, 25, '98	W. Iowa. .	Curette., perineorrhaphy; liga. broken not tied; sutured to facia with two buried silkworm gut .	Well; child 1 year ago; nearly died, but is all right now; never before so well.	"
42	5, 9, '98	Chicago. .	Curettement, perineorrhaphy, trachelorrhaphy . .	Ex. Dec. 10, 1900; perfect health.	Charity.
43	. . . '98	. . . . .	. . . . .	. . . . .	. . .
44	6, 1, '98	O. P. Ill. .	Curettement, perineorrhaphy, trachelorrhaphy . .	One year after, in good health.	Woman's.
45	6, 15, '98	Chicago. .	" " "	Well; refuses examination	Charity.
46	6, 20, '98	"	" " "	Perfect when left hospital; no subsequent report or ex . . .	Woman's.
47	6, 28, '98	"	" "	" " "	Charity.
48	9, 19, '98	L. Mich. .	Curettement, ex. of bladder	Uterus remained in posit'n; patient not cured of other trouble	P. G.
49	2, 14, '99	Nurse. . .		Examined Dec. 6, 1900; condition O. K	Woman's.
50	3, 21, '99	Illinois. .	Curettement, perineorrhaphy, hemorrhoids	Perfect condition Jan. 22, 1901	"
51	5, 19, '99	Indiana . .	" "	Letter tells of somewhat irrita. bladder; thinks position good	P. G.
52	. . . . .	. . . . .	. . . . .	. . . . .	Charity.
53	. . . . .	. . . . .	. . . . .	. . . . .	"
54	9, 20, '99	Chicago. .	Curettement, perineor.; pregnant, 1st time aborted	. . . . .	P. G.
55	10, 16, '99	"	"	. . . . .	"
56	11, 1, '99	Illinois. .	" perineorrhaphy	Dec., 1900, condition perfect	Charity.
57	4, 21, '00	Chicago. .	"	Perfect when left hospital; no subsequent report or exam . .	Charity.
58	5, 7, '00	"	Trachelorrhaphy, perineorrhaphy.	Condition no better	Woman's.
59	6, 18, '00	"	Curettement; abscess on hand opened	Perfect when left hospital	Charity.
60	6, 27, '00	O. Illinois.	" perineorrhaphy..	" " "	"
61	12, 29, '00	Wisconsin	Alexander operation..	Still some backache..	Woman's.
				Perfect health when left hospital	. . . . .

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES.

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
1	23	1, 16, '97	W. . . .	South Chicago.	Double salpingo-oöphoritis; retroversion of the uterus.	Laparotomy, removal of appendages, suspending uterus on strip of periton.	In perfect health 12, 10, '00, almost 4 years afterward.
2	30	2, 11, '97	Chi. .	Chicago. .	Large multilocular cyst, small cyst on left ovary.	Double ovariotomy, ventral fixation of uterus with strip of peritoneum.	Uterus in perfect position when patient left hospital.
3	34	2, 15, '97	Chi. .	"	Cystic right ovary with hematoma and retroversion of the uterus.	Right ovariotomy; uterus suspended on a strip of peritoneum.	In perfect health 2 mos. after operation; no later history.
4	32	2, 17, '97	P. G..	"	Double salpingo-oöphoritis endometritis, retroversion of the uterus.	Double salpin. oöphorectomy, mal-posi. u. cor., suspen. on strip of peritoneum.	In perfect health when she left the hospital.
5	31	2, 22, '97	P. G..	"	Double salpingitis, oöphoritis with retroversion.	Laparotomy, appendages removed, uterus suspended on urachus	Same as above.
6	30	3, 1, '97	P. G..	"	Cystic ovaries with small fibroids in uterus.	Appendages removed, fibroids nucleated and uterus suspended on urachus.	Made ideal recovery.
7	.	3, 11, '97	Chi. .	" .	Diseased appendages, retroversion of the uterus with adhesions.	Laparotomy, removal of appendages, replacing of u., suspen. on urachus.	
8	40	3, 17, '97	P. C..	Illinois . .	Diseased append., ovarian menorrhagia, metrorrhagia, retroversion	Curettement of appendages, suspension of uterus on urachus.	Exam. 2 yr. afterward, u. in perfect posi.; discomfort in pelvis; letter Dec., 1900, complains not much imp.
9	30	3, 17, '97	P. G..	Chicago. .	Diseased appendages, retroversion of the uterus with adhesions.	Removal of appendages, replacing u., suspension on strip of peritoneum.	In perfect condition when she left hospital.
10	37	4, 1, '97	Chi .	Michigan..	Double pyosalpinx, retroversion of the uterus, dysmenorrhea.	Laparotomy, removal of append., suspension of u. on strip of peritoneum.	In perfect health 2 years after operation; uterus in position
11	27	4, 3, '97	W. . .	Illinois . .	Diseased appendages, retroversion of the uterus with adhesions.	Removal of append., correc. of malposi., suspension on strip of peritoneum.	Exam. 12, 14, '00, u. in position, large range of movability, health perfect.
12	25	4, 5, '97	Chi. .	Chicago. .	Salpingitis with adhesions, retroversion.	Laparotomy, append. removed, cor. malposition, u. suspended on urachus.	In perfect health when she left the hospital.
13	30	4, 13, '97	Chi. .	"	Large cysts of both ovaries, retroverted and impacted uterus.	Romoved both ovaries, malposi. u. cor., suspended on strip of peritoneum.	Same as above.
14	29	5, 3, '97	Chi. .	"	Double pyosalpinx with retroversion of the uterus.	Removal of append., malposi correc., u. u. suspended on strip of peritoneum.	Examined in Dec., 1900; u. in perfect position and movable, patient well.
15	27	5, 5, '97	W. . .	Illinois . .	Diseased appendages, retroverted and adherent uterus.	Laparotomy, removal of appendages, u. suspended on strip of peritoneum.	Examined 12, 17, '00, u. in perfect condition, movable, patient well.
16	38	5, 10, '97	P. G..	Chicago. .	Laceration of perineum, dysmenorrhea, retrov., diseased append.	Curett., perineor., laparotomy, append. removed, u. replaced on strip periton.	Examined Dec. 10, 1900, perfect condition.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Continued.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
17	25	5, 10, '97	Chi. .	Chicago. .	Diseased appendages, retroversion with adhesions.	Append. removed, u. replaced, u. suspended on strip of peritoneum.	Examined in 1900; perfect health; u. in position.
18	.	5, 13, '97	Chi .	Missouri .	Diseased appendages, uterus retroverted.	Laparotomy, append. removed, u. suspended on strip of peritoneum.	Reported by letter Dec., 1900, that she was in perfect health.
19	25	5, 15, '97	W . .	Chicago. .	Double pyosalpinx with retroversion and adhesions.	Append. removed, u. replaced, u. suspended on strip of peritoneum.	Same as above.
20	29	5, 24, '97	Chi. .	"	Double pyosalpinx with retroversion and adhesions.	Same as above	Uterus in perfect position one year after operation.
21	35	6, 10, '97	Wis. .	"	Double pyosalpinx, retroversion, adhesions; periodical insanity.	Laparotomy, u. replaced, u. suspended on urachus.	Two yr. after, u. in perfect position, mental condit'n better, perf. health
22	45	6, 21, '97	P. G..	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. replaced, u. suspended on strip of peritoneum.	In perfect health, u. in position and movable 1 year after operation.
23	28	6, 25, '97	W. ' .	Missouri .	Pyosalpinx on the right side; pregnancy on the left.	Gestation sack and r. append. removed, u. suspended on urachus.	
24	.	6, 28, '97	C.. . .	Chicago. .	Disease of both appendages, retroversion with adhesions.	Laparotomy, appendages removed, u. suspended on strip of peritoneum.	In perfect health 6 months after operation.
25	32	7, 6, '97	Chi. .	"	Double ovarian cysts with retroversion.	Laparotomy, both ovaries with cysts removed, u. suspended on strip periton.	Dec , 1900, u. in perfect position, in fair health, abdomen a little sore.
26	31	7, 10, '97	P. G..	Illinois . .	Double salpingitis with ovarian cyst	Appendages removed, u. suspended on strip of peritoneum.	Letter Dec., 1900; well, works 14 hr. a day, 10 in family, does all the work.
27	29	7, 10, '97	P. G..	Chicago. .	Double pyosalpinx, retroversion with adhesions.	Laparotomy, appendages removed, u. suspended on strip peritoneum.	In perfect health 6 months after the operation.
28	27	8, 2, '97	Chi. .	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. suspended on strip of peritoneum.	In perfect health when she left the hospital.
29	29	8, 5, '97	P. G.	"	Right tube and ovary diseased, endometritis, retroversion, adhesions.	R. append. removed, u. replaced, u. suspended on strip of peritoneum.	Writes Dec., 1900: no better, backache, headache; no oppo. for exam.
30	23	8, 11, '97	Chi. .	"	Double salpingitis oöphoritis	Appendages removed, u. replaced, u. suspended on strip of peritoneum.	Exami'd Dec.,1900; in perfect health, u. in perfect position and movable.
31	48	8, 12, '97	W.'s .	"	Retrov., lacerated perineum, diseas'd appendages, menorrhagia, metrorrhagia, with periodic insanity.	Curette., perineorrhaphy, appendages removed, u. replaced, u. suspended on strip of peritoneum.	In perfect health 1 year after operation; insanity cured.
32	42	8, 16, '97	C.. .	"	Double pyosalpinx, retroversion and strong adhesions.	Appendages removed, u. replaced, u. suspended on strip of peritoneum.	
33	39	8, 18, '97	P. G.	"	Double pyosalpinx, retroversion, strong adhesions,	Appendages removed, replacement of uterus on strip of peritoneum.	
34	35	9, 9, '97	W... .	Kansas . .	Double pyosalpinx and hematoma of left side.	Appendages removed, u. suspended on strip of peritoneum.	Examined in 1900; in perfect health, uterus in position.
35	41	10, 9, '97	W... .	Chicago. .	Double salpingitis and oöphoritis, retroversion with dense adhesions	Appendages removed, u. replaced on strip of peritoneum.	Same as above.
36	23	10, 4, '97	C.. . .	Iowa . . .	Retroversion with adherent uterus, severe dysmenorrhea.	Curette., parovarium of r. ovary resected, u. replaced, u. suspended on strip of peritoneum.	Letter in '99; child with norm. labor, worked till confined, health never better, u. in nor'al posi. after confin.
37	28	10, 6, '97	P. G..	Chicago. .	Double pyosalpinx, retroversion and adhesions.	Appendages removed, u. suspended on strip of peritoneum.	Letter 1 year after; patient in perfect health.
38	39	10, 11, '97	C. . .	"	Double pyosalpinx, retrov., adhesions, small fibroid in uterine wall	Appendages removed by myomectomy, u. suspended on strip of peritoneum.	Patient had uterus removed one year afterward.
39	21	10, 18, '97	P. G..	Wisconsin.	Double pyosalpinx, parovarium cysts of right side, uterus retroverted	Append. remov., parovari. cyst enucleat., u. replaced, suspend. on strip periton.	
40	25	10, 23, '97	W . .	Chicago. .	Double salpingitis and oöphoritis, small fibroid in top of uterus.	Appendages removed, fibroid enucleated and u. suspended on strip of periton.	Examination, Jan., 1901, u. in perfect position, patient in perfect health.
41	39	10, 23, '97	C. . .	"	Double salpingitis; patient is unbalanced at menstrual periods.	Appendages removed, u. suspended on strip of peritoneum.	Patient much improved at the end of 1 year.
42	41	10, 25, '97	C. . .	"	Double salpingitis, fibroid in wall of uterus, retroversion.	Fibroids removed, appendages and u. suspended on strip peritoneum.	
43	36	11, 3, '97	W.'s .	Iowa . . .	Large multilocular of left ovary, fibroids of uterus.	Ovarian cysts remov., fibroids on u. walls enucleat., u. suspended on strip of p.	Letter Dec., 1900; best of health, no return of symptoms of any kind.
44	40	11, 1, '97	P. G .	Chicago. .	Retroversion with adhesions	Laparotomy, u. replaced and suspended on strip of peritoneum.	
45	38	11, 8, '97	P. G .	"	Double salpingitis hematoma of r. side, parovarium cyst on left side	Cyst removed, ovaries excised, u. suspended on strip of peritoneum.	Dec. 17, 1900, u. in perfect position and movable, some tenderness on l. side, health perf., with above excep.
46	23	11, 6, '97	C.. . .	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. replaced and suspended on strip of peritoneum.	
47	33	11, 22, '97	P. G.	"	Retroversion but movable; attempt to antifix, but ligament breaking, ventral suspension performed with strip of peritoneum.	. . . . .	
48	35	12, 28, '97	W.'s .	Illinois . .	Double pyosalpinx with cystic ovaries, retroversion with adhesions.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Jan. 1, 1900, patient strong, perfect health and thankful
49	35	12, 30, '97	W.'s .	Indiana..	Double pyosalpinx, retroversion with adhesions.	Same as above	Exam. within 2 yr. afterward, u. remained in position, general health not markedly improved.
50	18	1, 3, '98	C.. . .	Chicago. .	Double pyosalpinx with retroversion.	Same as above	
51	43	1, 3, '98	P. G .	"	Double pyosalpinx, hematoma of ovary.	Curette., appendages removed, u. suspended on strip of peritoneum.	Exam. Dec. 16, 1900, u. in perfect position and patient in perfect health.
52	30	1, 17, '98	P. G .	"	Double pyosalpinx, retroversion with adhesion.	Append. removed, u. replaced, u. suspended on strip of peritoneum.	Patient in perfect health 2 years after operation.
53	33	1, 24, '98	P. G .	"	Double pyosalpinx, cystic ovaries, retroversion, nymphomania.	Same as above	Patient much improved in health.
54	31	1, 31, '98	C. . .	"	Double salpingitis and oöphoritis, retroversion with adhesions.	Same as above	
55	28	2, 7, '98	P. G .	"	Salpingitis, cystic ovaries, retrov., adhesions, occasional convulsions and unconscious during menses.	Same as above	Examined Dec. 15, 1900, u. in perfect position; patient considers herself in perfect health.
56	23	2, 14, '98	C. . .	Illinois . .	Double pyosalpinx, broad ligament 4 inches in diameter.	Appendages removed, cyst removed, u. suspended on strip of peritoneum.	Exam. Dec 19, 1900, in perfect health, u. in perfect position.
57	24	2, 14, '98	C. . .	Chicago. .	Tubercular abscesses of both ovaries, retroversion.	Appendages removed, u. replaced on strip of peritoneum.	Exam. Dec. 18, 1900, improved and strong, considers herself in perfect health, u. in perfect position.
58	28	2, 23, '98	C.. . .	Indiana . .	Intramural fibroid of the uterus, cystic ovaries.	Same as above	Letter in 1901 states, patient in perfect health and thankful.
59	34	3, 12, '98	C.. . .	Illinois . .	Fibroid nodule in broad ligament, right ovary cystic.	Fibroids removed, ovary excised, ovary suspended on strip of peritoneum.	Patient died next day from exhaustion.
60	.	3, 14, '98	C. . .	Chicago. .	Double pyosalpinx, retroversion, laceration of the perineum.	Curette., perineorrhaphy, append. removed, u. suspend. on strip of periton.	
61	21	3, 21, '98	P. G .	Illinois . .	Double pyosalpinx, retrov., adhesions; excess. nervous at menses.	Appendages removed, suspension of u. on strip of peritoneum.	Exam. in 1900, absolutely well, u. in perfect position.
62	37	3, 21, '98	C . . .	Chicago .	Tubal pregnan. of r. side, pyosalpinx on l., retroversion with adhesions.	Ovum removed, 1 append. excised, u, restored and suspend. on sttip of periton.	
63	36	3, 22, '98	P. G .	"	Double pyosalpinx, general adhes'ns of uterus and appendages to intestines, retroversion.	Appendages removed, u. replaced and suspended on strip of peritoneum.	
64	24	4, 14, '98	P. G .	"	Double pyosalpinx, retrov., adhes., replacement of uterus and suspension on strip of peritoneum.	Same as above	Seen in 1900, in pefect health, u in perfect position.
65	41	4, 24, '98	C. . .	"	Double pyosalpinx, retroversion, adhesions.	Same as above	In perfect health, u. in position.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Continued.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
66	40	5, 9, '98	P. G.	Missouri.	Laceration of perineum and cervix, double pyosalpinx, retroversion	Curette., perineum restored, laparotomy, appendages removed, u. suspended on strip of peritoneum.	Patient in perfect health 2 years after.
67	31	5, 31, .	P. G.	Iowa . . .	Retroversion with adhesions, endometritis.	Curette., laparotomy, one ovary excised, u. replaced, susp. on strip of periton.	Exam. 2, 12, '01, in perfect health, u. in position.
68	31	5, 16, .	P. G.	Illinois . .	Multilocular ovarian tumor, retroverted uterus.	Tumor and ovary removed, u. replaced and suspended on strip of peritoneum.	Exam. 12, 16, '00; husband writes she is in perfect health, better than he ever expected she would be.
69	46	6, 9,	W. . .	"	Cystic right ovary, small fibroid in fundus of uterus, retroversion, endometritis.	Curettement, laparotomy, enucleation of fibroid, removal of appendages, suspension of u on strip of periton'm	
70	.	6, 15, .	C.. . .	Chicago. .	Double pyosalpinx, retroversion with dense adhesions	Appendages removed, u. replaced and suspended on strip of peritoneum.	
71	27	6, 28, .	W.. . .	"	Same as above	Curette., appenda. removed, u. removed and suspended from strip of periton'm.	
72	34	6, 28, .	P. G.	"	Salpingitis, oöphoritis, retroversion of uterus with adhesions.	Appendages removed, u. suspended on strip of peritoneum.	Seen in 1900, in perfect health, u. in perfect position.
73	35	7, 9, .	W.. . .	"	Same as above.	Same as above	
74	21	7, 11, .	P. G	Iowa . . .	Double pyosalpinx, lacerated perineum, hemorrhoids, periodic insanity.	Curette., u replaced, hemorrhoids excised, appendages removed, u suspended on strip of peritoneum.	Reported 1 yr. after; nervous symptoms practically cured, strong and much improved in general health.
75	24	7, 21, .	W.. . .	Washington.	Cystic ovary, retroversion with adhesions.	R. ovary resected, u. replaced and suspended on strip of peritoneum.	Exam. in 1900, in perfect health, u. in perfect position.
76	39	9, 27, .	W.. . .	Illinois . .	Fibroid in fundus of uterus, retroversion.	Append. removed to establ. artificial menopause, u. suspended on strip.	
77	61	10, 7, .	W.. . .	Wisconsin.	Retroversion with adhesions	Laparotomy, ovaries excised, u. replaced, suspended on strip of periton.	Reported in 1900, slight pain in side, otherwise practically well.
78	33	10, 10, .	W.. . .	Michigan.	Double pyosalpinx, fibroid of uterus.	Appendages removed, fibroids excised, u. suspended on strip of peritoneum.	Reported quite well, some nervous symptoms.
79	19	10, 17,	P. G.	Chicago. .	Cystic ovaries, severe menorrhagia and metrorrhagia with nervous symp., exaggerated at menstrua.	Appendages removed, uterus suspended on strip of peritoneum.	Exam. 12, 29, '00, in perfect health, nervous symptoms improved, u. in perfect position.
80	22	10, 17, .	P. G.	"	R. tubal pregnancy, suppurative dis of ovaries on l. side, marked retrov.	Ovum, left tube and ovary removed, u. suspended on strip of peritoneum.	Patient in perfect health when she left hospital.
81	28	10, 27, .	W.'s .	"	A broad ligament cyst 6 inches in diameter, l. appendages diseased.	Cyst removed, l. append, tube and ovary freed, u. replaced and susp on strip	Same as above.
82	39	10, 30, .	P. G	Indiana. .	Double ovarian and tubal suppura., retrov., menorrhagia, period. insan.	Appendages removed, u. replaced and suspended on strip of peritoneum	Letter from patient's parents Dec., 1900, states she is absolutely well.
83	32	11, 7, .	C . . .	Chicago. .	Double pyosalpinx, retroversion.	Same as above	Patient in perfect health when she left hospital
84	28	11, 14, .	P. G.	"	Salpingitis and oöphoritis with retroversion.	Both append. repaired, care taken to preserve ovaries; u replaced and suspended on strip of peritoneum	Six months after operation, patient was well.
85	19	11, 14, .	C. . .	"	Double salpingitis with adhesions.	Appendages removed, uterus replaced on strip of peritoneum.	Patient in perfect health when she left hospital.
86	26	12, 29, .	P. G.	Iowa . . .	Double pyosalpinx with adhesions, retroversion	Append. removed. u. replaced and suspended; Mikulicz drain employed.	Dec 20, 1900, letter states patient well.
87	24	1, 18, '99	W.. . .	Chicago. .	Double pyosalpinx, salpingitis and oöphoritis.	Appendages removed, u. suspended on strip of peritoneum.	Examination Dec. 29, 1900, perfect condition in every way.
88	39	1, 30, .	P. G.	"	Cystic ovary, double salpingitis with oöphoritis.	Same as above	
89	49	2, 13, .	P. G	Montana..	Retroversion with adhesions.	Uterus replaced and suspended on strip of peritoneum.	
90	29	2, 23, .	W.. . .	Nebraska .	Retroversion with adhesions, cystic ovaries.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Patient died suddenly next day.
91	22	3, 13, .	P. G	Chicago. .	Double pyosalpinx, adhes., ovarian abscesses, salpingitis, oöphoritis.	Same as above	
92	25	3, 21, .	W.. . .	"	Double pyosalpinx, salping., oöphoritis, retroversion with adhesions.	Same as above	
93	29	3, 27, .	C . . .	"	Double pyosalpinx, salpingitis, oöphoritis, adhesions.	Same as above	Exam. Dec. 17, 1900, uterus in perfect position and well.
94	32	3, 27, .	C. . .	"	Double pyosalpinx, retroversion, adhesions, salpingitis, oöphoritis.	Same as above	
95	30	3, 31, .	W.. . .	Montana..	Ovarian cyst, retroversion with adhesions, resection of ovary.	Same as above	
96	28	4, 4, .	P. G	Michigan..	Cystic ovaries, resection of ovary.	Same as above	"A great success." May call in Jan.
97	.	4, 10, .	C.. . .	Chicago. .	L. Hydro-salpingitis, r. pyosalpinx, ovarian abscesses and adhesions, double sal., oöphoritis.	Same as above	
98	30	4, 12, .	W.. . .	Illinois . .	Right ovary cystic beneath broad ligament, left ovary papilloma.	Same as above	Exam. 12, 18, '99, health perfect, uterus in perfect position.
99	30	4, 12, .	W.. . .	Chicago. .	Cystic ovary and tube, retroversion, adhesions, salpingitis, oöphoritis.	Same as above	Patient well; occasional attack of dysentery.
100	26	4, 18, .	W.. . .	"	Double hydro-salpingitis, retroversion with adhesions	Same as above	Writes she is in perfect health Feb. 14; uterus in perfect position.
101	28	4, 19.	P. G	Illinois . .	Cystic ovary, salpingitis, laceration of perineum, retroversion.	Curette., perineorrhaphy, ovaries resected, u. restored and suspended on strip of peritoneum.	Examined Dec. 29, 1900, uterus in perfect position.
102	26	4, 25, .	P. G.	"	Dysmenorrhea, retroversion, salpingitis	U. dilated, curette., appendages remov'd, u. suspended on strip of peritoneum	
103	19	5, 1, .	C.. . .	Chicago. .	Broad ligament cyst, cystic ovaries with retroversion.	Cysts removed, u. suspended on strip of peritoneum	
104	44	5, 1, .	C.. . .	"	Persistent retroversion.	Uterus suspended on strip of peritoneum.	
105	30	5, 8, .	C.. . .	"	Lacerated perineum, double pyosalpinx, dense adhesions, retrov.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Patient died of shock in 12 hours.
106	32	5, 8, .	C.. . .	"	Retroversion with cysts of left ovary.	Resection of cyst of left ovary, suspension on strip of peritoneum.	
107	19	5, 15, .	C.. . .	"	Double pyosalpinx, retroversion with adhesions.	Appendages removed, u. suspended on strip of peritoneum.	
108	28	5, 15, .	C.. . .	"	Double pyosalpinx, retroversion with adhesions.	Same as above	Died 40 hours after operation from shock.
109	17	5, 22, .	C . . .	"	Same as above.	Same as above	In perfect health 12, 17, '00, uterus in perfect position.
110	18	5, 29, .	P. G.	Indiana..	Double pyosalpinx, endometritis . .	Curette., append removed, u. restored and suspended to strip of peritoneum.	Examined Dec., 1900, slight backache, uterus in perfect position.
111	24	5, 29, .	P. G.	Michigan.	Left pyosalpinx	Curette., l. ovary and tube removed, cyst resected from r. ovary, u. suspended on strip of peritoneum.	General health much improved, still some pain at menstruation.
112	.	5, 29, .	. . . .	Minnesota	. . . . .	Appendages removed, u. suspended on strip of peritoneum.	
113	.	5, ...	. . . .	"	Double pyosalpinx, laceration of perineum and cervix	Curette., cervix and perineum repaired, u. suspended on strip of peritoneum.	Patient very much improved after one year.
114	.	6, 1, .	W.. . .	Indiana..	Cyst of left broad ligament, retroversion.	Appendages removed, u. suspended on strip of peritoneum.	Patient's health much improved.
115	38	6, 8, .	W...	Kansas . .	Double salpingitis, retroversion with adhesions.	Same as above	Much improved one year after operation.
116	.	7, 5, .	C.. . .	Chicago. .	Cyst of right ovary, 4 by 3 inches in diameter, small cyst on left.	Same as above	
117	56	7, 5, .	W.. . .	"	Adenosus cystoma of both ovaries. .	Cysts removed, uterus suspended on strip of peritoneum.	Patient died from return of disease, Jan., 1900.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Continued.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
118	24	7. 24. '99	P. G.	Chicago. .	Double pyosalpinx, retroversion. . .	Appendages removed, uterus suspended on strip of peritoneum.	One year after, patient in perfect health.
119	24	7. 31. .	P. G.	Illinois . .	Laceration of perineum, r. pyosalpinx, retroversion, adhesions.	Same as above	Examined 12. 18. '99, perfect health.
120	25	7. . . .	W . .	"	Cystic degeneration of ovary, anteflexion, retroversion.	Dilation, curettement, cysts of both ovaries resected, uterus suspended on strip of peritoneum.	Jan. 8. 1901, perfect health.
121	35	8. . . .	W . .	Chicago. .	Extra-uterine pregnancy, pyosalpinx.	Ectopic pregnancy and appendages removed, u. suspended on strip of perito	
122	26	8. 18. .	W . .	"	Retroversion with adhesions, cystic ovaries.	Appendages removed, u replaced and suspended on strip of peritoneum.	
123	27	8. 14. .	P. G.	"	Double pyosalpinx, retroversion with adhesions.	Same as above	Examined 12. 17. '00, perfect health.
124	38	8. 22. .	Str't'r	California	Chronic retroversion with adhesions, cystic ovaries.	Dilatation, curettement, cyst and right ovary excised, u. replaced and suspended on strip of peritoneum.	Seen 3 mo after operation, uterus in perfect position; reported Dec., '00, condition very much improved.
125	27	9. 30. .	W . .	Iowa . .	Tubercular peritonitis, retroversion with adhesions, cystic ovaries.	Ovary resected, uterus replaced and suspended on strip of peritoneum.	Letter Dec., 1900, states she is in perfect health; thankful for operati'n.
126	32	10. 2. .	P. G.	Chicago. .	Double hydrosalpinx, retroversion with adhesions.	Appendages removed, u replaced and suspended on strip of peritoneum.	
127	20	10. 2. .	C. . .	"	Double pyosalpinx, retrover., adhes.	Same as above	
128	.	10. 3. .	W . .	Illinois . .	Retroversion with adhesions.	Curettement, uterus suspended on strip of peritoneum.	Examined Dec., 1900, uterus in position, much improved in health.
129	22	10. 3. .	W . .	Chicago. .	Tubercular salpingitis, retroversion with adhesions.	Appendages removed, u. replaced and suspended on strip of peritoneum.	Improved first 6 mo.; now has symptoms of returning tuberculosis, uterus remained in perfect posit'n.
130	.	10. 10. .	P. G.	"	Retroversion with adhesions.	Laparotomy, adhesions sepa., u. replac'd and suspended on strip of peritoneum.	
131	23	10. 10. .	W . .	"	Cysts of right ovary, subperitoneal fibroid on anterior wall of uterus.	Curette., cyst excised, fibroid, u. suspended on strip of peritoneum.	Exam. in last 6 mo., considers herself well, uterus in perfect position.
132	36	10. 23. .	P. G.	"	Retroversion with adhesions.	Adhesions broken up, uterus suspended on strip of peritoneum.	Pregnant since opera., normal labor. Confined by Dr. Milimo; exam. 1 mo. after confinement, u. in perfect posi.
133	.	11. 20. .	C. . .	"	Cystic ovaries, salpingitis.	Ovary resected, appendages removed, u. suspended on strip of peritoneum.	
134	.	12. 11. .	P. G.	"	" " hydrosalpinx.	Ovary resected, uterus replaced on strip of peritoneum.	
135	21	12. 12. .	W .	Wisconsin.	Tubercular salpingitis, retroflexion.	Appendages removed, u. replaced and suspended on strip of peritoneum.	
136	.	3. 19. '00	C. . .	Chicago .	Double pyosalpinx, retroversion. . .	Same as above	
137	.	4. 7. .	P. G.	Indiana .	Double salpingitis.	Same as above	Letter 12. 22. '00; she states she is but little better.
138	.	3. 28. .	C. . .	Chicago .	Double salpingitis, retroversion. . .	Same as above	Exam. 12. 21. '00, in perfect health, uterus found in perfect position.
139	.	4. 21. .	W . .	Illinois . .	Cyst of left ovary, with retroversion.	Cyst resected, u. replaced and suspended on strip of peritoneum.	Exam. Apr., 1901, relieved of former symptoms, u. in perfect position.
140	.	4. 26. .	P. G.	Iowa . .	Double pyosalpinx with retroversion	Removal of appendages, uterus suspended on strip of peritoneum.	Letter 1. 1. '01, was in perfect health until she had fall a month previo's.
141	.	4. 30. .	P. G.	Chicago. .	Double pyosalpinx, retroversion, adhesions.	Same as above	Perfect health 6 mo. after operation.
142	25	4. 26. .	C. . .	"	Double pyosalpinx with retroversion	Curette., appendages removed, uterus suspended on strip of peritoneum.	
143	.	5. 7. .	C. . .	"	Pyosalpinx, endometritis, laceration of the perineum.	Curette., perineum restored, r. ovary resected, uterus suspended on strip of peritoneum.	
144	.	5. 1. .	C. . .	"	Double pyosalpinx, retroversion. . .	Curettement, uterus replaced and suspended on strip of peritoneum.	
145	.	5. 1. .	W . .	Indiana . .	Cyst of right ovary, laceration of cervix and perineum, with retroversion.	Curettement, perineorrhaphy, trachelorrhaphy, uterus suspended on strip of peritoneum.	Letter Jan., 1901, not markedly improved, headaches, menstruation scanty and delayed.
146	.	5. 14. .	C. . .	Chicago . .	Removal of cyst from right ovary. .	Same as above	Letter from fam. physician Jan., '01, states she is much impr'd, but not entirely reliev'd of symp. at menses.
147	.	5. 17. .	P. G.	"	Retroversion, with adhesions and appendicitis.	Appendix removed, uterus replaced and suspended on a strip of peritoneum.	
148	.	5. 14. .	P. G.	" .	Double pyosalpinx, retroversion. . .	Perineorrhaphy, appendages removed, u. suspended on strip of peritoneum.	Letter Jan., 1901, states patient considers herself in perfect health.
149	.	6. 15. .	W . .	Wisconsin.	Retroversion, endometritis	Curettement, uterus suspended on strip of peritoneum.	Letter states, gained steadily, good as new, little nervous as yet.
150	29	6. 18. .	C. . .	Chicago. .	Parovarian cyst of left side, endometritis, laceration of the perineum.	Curettement, perineorrhaphy, appendages and cyst removed, uterus suspended on strip of peritoneum.	
151	.	6. 20. .	P. G.	Indiana. .	Right-tube ovarian cyst four or five inches in diameter, l. ovary cystic.	Cyst and both appendages removed, u. suspended on strip of peritoneum.	Let Dec., 1900, considers herself well, but not as strong as she would like.
152	.	6. 29. .	W . .	Illinois . .	Laceration of the perineum, retrover. with adhesions, coccyodynia.	Perineorrhaphy, u. replaced, suspend. on strip of peritoneum coccyx removed.	Letter of Dec. 28, states the patient is absolutely well.
153	28	7. 28. .	C. . .	"	Retroversion with adhesions. . . .	Uterus suspended on strip of peritone'm	Jan., 1901, patient in perfect health.
154	.	7. 13. .	P. G.	Chicago. .	Double salpingitis, oöphoritis, with retroversion.	Appendages removed, uterus suspended on strip of peritoneum.	
155	.	8. 18. .	W . .	"	Small fibroid of the u., perineum lacerated, endometritis, retroversion.	Curette., perineorrhaphy, appendages removed, u. susp. on strip of periton.	Died 2 mo. later from a trouble not connected with the operation.
156	.	8. 7. .	P. G.	Iowa . . .	Double salpingitis with retroversion	Appendages removed, uterus suspended on strip of peritoneum.	Let Jan. 1, complains of pain on r. side, down limb; not much better.
157	.	8. 28. .	W . .	Illinois . .	Laceration of perineum, retroversion with adhesions.	Curette., perineum restored, uterus suspended on strip of peritoneum.	Jan. 1. '01, patient in perfect health.
158	20	9. 4. .	W . .	Chicago .	Retroversion with fixation, endometritis.	Curettement, uterus replaced and suspended on strip of peritoneum	May 1. '01, patient in perfect health.
159	.	9. 12. .	P. G.	Indiana. .	Retroversion, endometritis with severe dysmenorrhea.	Curettement, uterus replaced and suspended on strip of peritoneum.	Fam. physician states 1. 1. '01, she is in perfect health, no dysmenorrhea, uterus in perfect condition.
160	.	9. 20. .	W . .	Chicago. .	Double pyosalpinx, endometritis, retroversion.	Curettement, appendages removed, u. suspended on strip of peritoneum.	Exam. 12. 27. '00, considers herself well, organ in perfect position.
161	.	10. 8. .	P. G.	Illinois .	Double pyosalpinx, endometritis.	Same as above	
162	30	10. . . .	C. . .	Indiana. .	Laceration of perineum, retroversion with adhesions.	Curette., perineorrhaphy, laparotomy, u. suspended on strip of peritoneum.	
163	23	10. 31. .	P. G.	Chicago. .	Double salpingitis with retroversion	Curette, appendages removed, u. replaced and susp. on strip of periton.	Four months later the patient was in perfect health.
164	36	10. 31. .	P. G.	"	Laceration of the perineum, double pyosalpinx, retroversion.	Perineum restored, curette., appendages removed, u. suspended on strip perito.	Four months after operation the patient was in perfect health.
165	28	11. . . .	P. G.	"	Double salpingitis, retroversion. . .	Appendages removed, uterus suspended on strip of peritoneum.	Patient in perfect health 6 months after operation.
166	.	11. . . .	P. G.	"	Double salpingitis with retroversion	Appendages removed, curettement, u suspended on strip of peritoneum.	Patient in perfect health 3 months after operation.
167	21	11. 12. .	C. . .	"	Double pyosalpinx.	Same as above	Patient now in normal condition.
168	41	11. 26. .	P. G.	"	Laceration of perineum, retrover. with adhesions, double pyosalpinx	Perineum restored, curette., appendages removed, u. susp. on strip of periton.	Death in 30 hours.
169	32	12. 6. .	W . .	"	Double pyosalpinx, retroversion with adhesions, endometritis.	Appendages removed, uterus suspended on strip of peritoneum.	Patient in perfect health 3 months after operation.

VENTRAL FIXATION OF UTERUS AFTER LAPAROTOMIES. *(Concluded.)*

No.	Age.	Date.	Hospital.	Address.	Diagnosis.	Operation.	Result.
170	.	12, 17, '00	C. .	Illinois . .	Double pyosalpinx, endometritis . .	Append. removed, u. suspended on strip.	Perfect health 6 wk. after operation.
171	.	12, . . .	P. G .	"	Laceration of perineum, endometritis, retroversion.	Perineorrhaphy, perineum restored, u. suspended on strip of peritoneum.	Patient's condition satisfactory in 6 weeks.
172	40	12, 29, .	W . .	Indiana.. .	Small fibroid in walls of uterus, myomectomy for fibroid.	Appendages removed, myomectomy, u. suspended on strip of peritoneum.	Patient in perfect health 2 months after operation.
173	.	12, 31, .	P. G .	Chicago. .	Laceration of perineum, endometritis, retroversion.	Perineorrhaphy, curettement, uterus suspended on strip of peritoneum.	

the urachus is entirely absent. 3. In a very small percentage of cases the urachus remains pervious from its bladder end.

The Writer's Method of Ventral Fixation by Suspension of Uterus on Strip of Peritoneum.—I first described my operation and reported several cases to the Chicago Gynecological Society, Nov. 19, 1897.[18] One hundred and seventy-three cases upon which this operation has been performed I now have the honor to present to you for analysis.

I have finally adopted this operation exclusively for all cases requiring a ventral suspension of the uterus for the following reasons: 1, because of its simplicity and ease of accomplishment; 2, because of the thoroughness of fixation; 3, because it positively does away with any form of permanent buried sutures; 4, because it accomplishes a fixation which allows of a large range of movability; 5, because the fixation does not directly involve the appendages; 6, because experience demonstrates that the point of fixation is not the source of subsequent irritation or pain; and 8, because of the possibility of pregnancy occurring and going on to normal confinement after the operation.

The technique of the operation is very simple. It is performed in the same manner whether the appendages are removed or remain intact. The abdomen is opened with the patient in Trendelenburg's position with a median incision two to three inches in length extending from two inches below the umbilicus to about one to two inches above the symphysis pubis. The uterus is carefully freed from adhesions of every kind well down to the Douglas pouch. The posterior surface of the broad ligaments are also carefully freed from any fixation. The uterus is then brought well forward with its fundus pressed upon the parietal peritoneum just beneath the lower end of the abdominal incision. From one side of the abdominal incision, and parallel to it, a ribbon of peritoneum, with its subperitoneal connective tissue about one-half inch in width with one edge of it corresponding to the free edge of the abdominal incision is rapidly dissected free with the scissors or knife; the end of this ribbon corresponding to the upper end of the wound is severed and the lower end is dissected until it extends beneath the lower angle of the incision. This prepares a firm band of peritoneal and subperitoneal tissue about one-half inch in width, about three inches in length, with an attachment to the peritoneum beneath the lower angle of the wound, in the median line directly over the fundus of the uterus. The uterus is now supported well forward with the two fingers of the left hand of the operator, a Cleveland ligature carrier is made to penetrate the fundus just posterior to its crest in a direction from behind forward just beneath the peritoneum and a width of grasp of three-quarters of an inch. After the blades of the carrier have penetrated well through the tissues, they are opened to the extent of an eighth of an inch and are made to grasp the free end of the peritoneal ribbon, and then to draw it through the opening made (Fig. 4). The uterus is now pushed well forward on the ligament until it is arrested by its lower fixed end, and then, by means of a small antiseptic catgut buried suture, the uterus is temporarily fixed. This catgut suture is passed through the aponeurosis, the muscle and the peritoneum on one side of the lower angle of the wound, then transversely through the peritoneal and subperitoneal coat of the uterus, just posterior to the point of exit of the new suspending peritoneal ligament, and finally passed to the peritoneum muscle and aponeurosis of the opposite side of the abdominal wound and tied, thereby firmly fixing the uterus for a time corresponding to the life of the catgut, and until such a time as a new suspensory ligament will be securely fixed again to the peritoneum (Fig. 5).

SUMMARY OF ONE HUNDRED AND SEVENTY-THREE OPERATIONS FOR VENTRAL-SUSPENSION.

By correspondence with patients direct or with their family physician and by personal interviews I have been able to learn of the condition of 114 of the 173 cases I have operated on for ventral fixation of the uterus by this new method.

In the 173 cases representing all operated on for ventral fixation by this method in the four years beginning Jan. 1, 1897, to June 1, 1901—many of the cases including operations for laceration of the perineum, cervix, and removal of the appendages and even myomectomies for fibroids—there were six deaths, or a primary mortality of 3.5 per cent. In but 13 cases were there no complicating conditions requiring operations other than the laparotomy for the ventral fixation. In these there was no death. The appendages were removed for septic lesions as an accompanying operation of the ventral fixation in 114 cases. In five large ovarian cysts were removed. In four the appendages were removed for tuberculosis. In five for parovarian cysts. In 12 cases the appendages were removed and myomectomy was performed for accompanying fibroids of the uterus. In 29 cases the appendages were not removed. In twelve of these 29 cases conservative surgery was necessary on one or both ovaries. One case was accompanied by an operation for appendicitis. Of the 173 operations there were four which had an accompanying operation for ectopic pregnancy. Perineorrhaphy was an accompanying operation in twenty-five of the 173 cases. Curettement of the uterus was performed in twenty-eight of the 173 cases. Trachelorrhaphy was performed in 19 of the series of cases.

Serious mental disturbances existed previous to the operation and was the paramount symptom for which relief was sought in 9 cases. These were cases 21, 31, 41, 53, 55, 61, 74, 79, 82.

In case 21 the patient was considered mentally unbalanced by the family, with exacerbations at the menstrual period. The retroversion was accompanied with infected appendages. The appendages were removed and the uterus suspended. The patient was examined by me two years after the operation and the uterus was in perfect position and condition, and she was said to be cured of her mental symptoms by her family.

Case 31 had mental disturbances since birth of her last child, which was exaggerated at menstruation. She had severe dysmenorrhea and menorrhagia and a laceration of the perineum accompanying the retroversion. Curettement, perineorrhaphy and removal of the appendages were done at the time of the ventral fixation. In one year after the operation the patient was in perfect health.

Case 41 was a duplicate of the above case precisely except that the perineum did not have to be restored. At the end of one year the mental condition was improved, but not entirely relieved. The uterus remained perfect.

Case 55, unmarried, had cystic appendages, a retroverted and adherent uterus. She had "severe convulsions and became unconscious at her menstrual periods." The appendages were removed and the uterus replaced and suspended. Examination of the patient by me three years later revealed the pelvic organs perfect and the patient stated that she had been in perfect health since the operation.

Case 61 gave a history of being mentally disturbed at the menstrual period. Her appendages were infected and the uterus was fixed in retroversion. The appendages were removed. Three years afterward I examined the patient. Her uterus was well supported and her health absolutely perfect.

Case 74 gave a history of periodic insanity much aggravated at menstruation. The woman was 21 years old and married. The appendages were infected and the uterus retroverted and adherent. The appendages were removed and the uterus suspended. One year afterward the patient was well.

Case 79. Married, aged 19, had large cystic appendages and suffered with excruciating dysmenorrhea and excessive menorrhagia. She had alarming nervous symptoms which assumed a marked form of mania at menstrual periods. The appendages were removed and the retroverted uterus replaced and suspended. Two years afterward I examined the patient and she was in perfect health.

Case 82. Married, age 39, had double pyosalpinx retroversion with adhesions. She had symptoms of severe menorrhagia and periodic insanity aggravated at menstrual periods. The appendages were removed and the uterus replaced and suspended. A letter from the patient's parents two years afterwards discloses the patient to be absolutely well.

In the 173 cases 9 failures must be recorded. These were cases 38, 49, 59, 90, 103, 108, 117, 155, 168. Among the nine failures I place 6 deaths, leaving but three to count for failures out of the 167 which recovered. Of these case 38 submitted to a vaginal hysterectomy one year after the first operation, for carcinoma. The fundus was found well forward and well fixed with a broad movable attachment.

This case (38) and another one of June 13 gave me an opportunity of making an antemortem examination of my handiwork.

Case 38 was operated on one year after her ventral suspension for cancer, the operation being vaginal hysterectomy. During the progress of this operation I found the fundus suspended to the abdominal wall above the bladder by a well-defined cord of tissue about one eighth inch in diameter and three-fourths of an inch in length, which preserved a structure resembling a connective tissue center covered with peritoneum. Fig. 6 gives a very accurate representation of this ligament as it appeared through the vault of the vagina when the uterus was freed from its attachments and drawn well down.

Case 78 was a case in which a secondary laparotomy became necessary because of persistent pain in the left side of the pelvis, accompanied with periodic partial obstruction of the bowels. A diagnosis of intestinal adhesion to the point of repair of the ovary of the left side, decided a second operation. When the incision was made the beautiful picture shown in Figure 7 was presented. A portion of the intestine was adherent to the line of repair of the left ovary. With this relieved the abdomen was closed. The new ligament was one-eighth of an inch in diameter at its center and smallest part, and was about one inch in length. The ligament was shaped like a round ligament rather than a peritoneal strip.

Case 49 was not examined or interviewed by me, but she replied by letter that her health was not much improved. Her operation included the removal of very seriously diseased appendages.

Case 117 at the time of operation for ventral fixation had adenocystoma of both ovaries removed. The patient died in a year and a half from malignant disease in the pelvis.

There were two cases of pregnancy occurring in the 173 cases. Case 36 gave birth without complications to a healthy child two years after the operation. There were no abnormal symptoms during the carrying of the child. One year after the confinement the uterus was in normal position and the patient well. Case 132 was confined in normal labor one year after the operation, giving birth to a healthy child. She had no abnormal symptoms during the child-carrying period. One and a half years after her uterus was in normal position and the patient well.

Ninety-seven of the 173 cases have communicated with me directly either by personal interviews and examination, reports from the family physician or direct correspondence at periods of from a half to five years after the operation. Four thus reported between 4 and 5 years after the operation; twenty-nine between 3 and 4 years; twenty-one between 2 and 3 years; twenty-two between 1 and 2 years; twenty-one between one-half and one year.

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18. N. Y. Gyn. and Obstet. Jour.

DISCUSSION ON PAPERS OF DRS. RIES AND MARTIN.

DR. J. RIDDLE GOFFE, New York City—These two papers open up the whole subject of treatment of retroversion. We can perhaps consider this question in a more systematic and logical way if we will first discuss the dynamics of the female pelvis. The misunderstanding and divergence of opinion on this subject of displacement has been largely due to a misconception of the dynamics of the female organs—the position of the organs when the woman is on her feet. We have been getting our ideas from frozen sections, which merely represent the condition in an individual case. We must examine living patients when they are on their feet. It is then that the forces are at work that hold the organs in place and that influence displacement. When a woman is on her feet, the symphysis pubis is on a lower level than the tip of the coccyx. Normally the symphysis is in a line with the center of gravity of the body. The uterus is in the center of the space with the bladder filling in the space between the uterus and the symphysis. The uterus lies on its anterior face and is held in place by its ligaments. [This was illustrated by a free-hand drawing on the board.] It was formerly supposed that the uterus must be held up by something under it, and we built up the perineum as a uterine support. That theory has been exploded long ago. The supports of the uterus are its ligaments. All organs in the body are supported by ligaments; none are held up by anything under them, and the uterus corresponds to nature's plan of suspension.

The most important supports of the uterus are the utero-sacral plus the utero-vesical ligaments, which form a sling in which the uterus rests. The uterus can rise or fall according to the fulness of the bladder and can slide backward or forward. With the uterus in this position we have the intra-abdominal pressure, carrying the fundus toward the front, and gravity pulling it down. To keep the uterus in place we must keep the cervix well up in the hollow of the sacrum. The utero-sacral ligament is most important for retaining the uterus in this position, and it is impossible for the fundus to retrovert as long as the ligament is not relaxed.

The ideal operation for the restoration of the uterus to its normal position will eventually be found by working on this utero-sacral ligament. I have attempted it, but as yet we have not succeeded in the operations on the utero-sacral

ligament. We must turn then to the other ligaments, the broad or round ligaments, for that support. I believe that the operations we do on the round ligaments tend to hold the fundus to the front long enough for the sacral ligament to recover itself and thereby we restore the normal support. In the processes of involution and sub-involution the ligaments take as much part as the uterus; in pregnancy the ligaments are also enlarged and lengthened. If after parturition involution does not take place properly, in the ligaments, the fundus sags and eventually tips backward.

What shall we do in cases of retroversion? We can not shorten the utero-sacral ligament, and the next best ligament is the round ligament, or we can attach the fundus to the abdominal wall as has been suggested. I am unalterably opposed to any operation that necessitates an incision through the abdominal wall for a condition so easily relieved as a retroverted uterus. Dr. Martin has laid stress upon the seriousness of a retroverted uterus, but I must disagree with him. There is a large school of gynecologists who take the position that if the uterus and its appendages are healthy it makes little difference where the fundus rests. It is the complicating diseases and the adhesions that make trouble. I believe it is better that the uterus should be in the normal position, but I do not believe that retroversion, when uncomplicated, justifies us in making an incision through the abdominal wall on account of the immediate danger of peritonitis and the immediate or remote danger of hernia. Any man who has had much experience in ventral fixation or the Alexander operation will have to admit that in the hands of every operator a certain proportion of these women eventually suffer from hernia. Such a woman is a thousand times worse off than she was before the operation, so that I denounce the Alexander operation *in toto*.

I can not approve of Dr. Martin's procedure, although he has brought out very ingenious methods of shortening the round ligament. The operation is not indicated in cases in which there is disease or adhesions of the appendages; indeed, the Alexander operation is contraindicated. It is applicable only in simple retroversion. The operation he has suggested of tying the round ligaments in the subcutaneous tissue necessitates still further manipulation, and the more we manipulate the tissue about the symphysis and mons veneris, the greater the danger of sepsis, which is almost invariably followed by hernia. The simpler we can make these operations, the better. These same remarks will apply to ventral fixation.

I believe that Dr. Ries is working in the right direction. He has presented a very important procedure. He attacks these conditions through the vagina, an operation which is exceedingly simple and which is free from the dangers that attend a laparotomy. It is entirely free from the subsequent danger of hernia. If we can attain just as good results by operating through the vagina as we can by doing a laparotomy, then, I say, by all means that is the operation of choice. Whether it is necessary to resort to the method described by Dr. Ries or whether it can be accomplished in a simpler manner, is a question. I operate through the anterior fornix. I make a transverse and then a longitudinal incision along the whole anterior wall of the vagina, dissect up the bladder, pull the uterus down into the vagina and draw down the appendages. Through this incision I am able to do any amount of conservative work on the appendages. After I have completed the work in that direction, I shorten the round ligament through the same incision. I draw them up, double them on themselves, stitch them together with three stitches and pin the loop to the anterior face of the uterus. I believe Dr. Dudley suggested the latter step. My results have been most satisfactory. I first used catgut ligature, but it absorbed too quickly and I had three recurrences. I now use silk and in six years have had no failure so far as recurrence is concerned. My results in the matter of pregnancy and subsequent delivery have been most satisfactory. I believe the true method of treating this condition is to do it through the vagina, and at the present time the best method is the shortening of the round ligaments.

DR. W. H. HUMISTON, Cleveland, Ohio—It seems to me that Dr. Ries' operation is the most feasible one where an operation is necessary. I have but one theoretical objection: I do not believe that the round ligaments support the uterus. I think they act as guy-ropes, and prevent the retrodisplacement. If they are shortened to the extent described, will it not complicate the bladder space. and will it not produce frequent micturition?

I can not agree with the statement that displacement of the uterus produces no symptoms. A retrodisplaced uterus remaining in that condition any length of time becomes congested, and a little later inflammation arises, and symptoms of this condition is evidenced by pain, leucorrhea, backache and headache, and is also followed by indigestion, constipation and nervousness. The intra-abdominal pressure, when the uterus is in its normal position, is on the posterior surface of the uterine body, and straining at stool carries the fundus away from the rectum. Misplace the uterus so that the intra-abdominal pressure is exerted on the anterior surface of the uterus, and you have it crowded into the concavity of the sacrum and acting like a ball valve in preventing the feces from passing.

I studied the Alexander operation, saw it done, and did several myself, but without permanent relief to my patients. I believe it is an operation not indicated if you have diseased appendages. Shortening the round ligaments will not relieve the disease in the tubes and ovaries. In every simple case of retrodisplacement, without diseased appendages, I find curetting the uterus, putting it in place and supporting it with a pessary, reduces its size and hardness. When you remove the pessary six or ten weeks later, the uterus will remain in position. If you have diseased appendages you can, by operating through the vagina as Dr. Ries described, take care of that condition. If necessary you can open the posterior cul-de-sac, separate the adhesions, pull down the appendages and either do a conservative operation or remove them, if hopelessly diseased. In cases of diseased appendages with adhesions, remove them and suspend the uterus. If you leave diseased appendages, you will fail to relieve the suffering patient.

DR. SETH C. GORDON, Portland, Me.—The particular way I want to criticise Dr. Martin's paper is that of a protest against this so-called conservative surgery. Will any reasonable man, woman or child tell me why, when the abdomen is opened and the appendages are removed, you should stitch the uterus up to the abdominal wall? It is simply a gestation bag which is never to be used for gestation. The ovaries and tubes are gone and pregnancy can not possibly take place. The function is lost, but the uterine arteries continue to pump blood into this bag and you have a congested condition of the pelvis as long as those arteries are intact. I do not wonder that the cases reported as not well did not get well, because this condition of things existed. I believe in conservatism but I believe in a conservatism which conserves a woman's health. We are bound to look as it from the patient's standpoint. I do not want it to go out from this Association that we are in favor of removing the uterine appendages and then stitching the body of the uterus up to the abdominal wall. Get rid of it. It is of no further use to the woman and often is the source of a great deal of pain and suffering later on. "If an eye offend thee, pluck it out." I do not know whether you all believe in the authority, but I think it is pretty good. Let us consider this thing carefully, and let us act sensibly.

I can see no reason for leaving these organs which are of no possible use and which contain arteries which are pumping blood into them all the time. In the days when they sacrificed so many uterine appendages, they said the patients did not get well. They did not in many cases, simply because the uterus was left behind. I protest vigorously against any such teaching and against any such practice. We ought to be guided by common sense.

DR. A. GOLDSPOHN, Chicago—I want to congratulate my colleagues for the very commendable papers which they have given us and particularly because they both squarely denounce direct or immediate fixation of the uterus to anything. They

do not do any more than to anchor the uterus by means of some ligaments. With regard to Dr. Ries' ingenious operation, I have a few objections that weigh very seriously with me when we consider not merely the immediate welfare of the patient but more especially the ultimate results, those which pertain to the condition of the organs after the woman has had one or more children. The round ligaments are the only things that can be rationally used as a means to cure retroversion, for the reason that they are a part of the uterus. The musculature of the uterine body passes directly into these ligaments. They are arms of the uterus, and its only arms, and as such they undergo both evolution and involution with the uterus during and after the pregnancy respectively. Therefore they are the only rational and effective means, no matter what, if anything, was their office previously. The only question is: Which is the best way of using them? While I do not believe that Dr. Ries' method is the best, the same objection pertains to the shortening of round ligaments through the abdomen, namely, that the shortening is secured by doubling up the strong portion of the ligament, and not by strengthening or eliminating the weaker parts. The round ligament is not a structure of uniform size, but is like a slender pyramid. Near the uterus it is from six to nine times larger and stronger than where it enters the abdominal wall; and all that these vaginal and ventral operations can do is to double up the strong proximal ends and leave the slender distal parts near their insertions as weak as ever. Therefore, the results can naturally not be as good as when we get at these ligaments from their distal ends, double up or eliminate their distal slender portions, and bring their central strong parts alone into use, as is done in good Alexander operations.

With regard to the conservative operations on the appendages, in general, there is this plain fact which was alluded to by Professor Sanger, of Leipsic, five years ago, that in order to get those organs to present themselves for treatment we have to draw them a great distance away from their normal habitat, i. e., the lateral wall of the pelvis, and do violence to their lateral supports. If they are already prolapsed we improve their condition, but not their position, and the improvement of condition will be only of temporary benefit. Sanger expresses a fear that vaginal operations upon the appendages are likely to induce such prolapse. Furthermore, we can not get them into position, that they will lie there without uncomfortable tension. We can not do as good work as when we draw the ovary into the ventral wound, and not at all as well as we can if we draw it into the dilated internal inguinal ring in conjunction with an Alexander operation. The reason why the ovary and ampulla of the tube can be drawn into the dilated internal inguinal ring and that they will lie there so well for us to do work on them, is that the fixation point of the ovary and ampulla of the tube is immediately back of the internal inguinal ring and right near it. Simply put your finger into the ring to the second joint and you are upon it. The organs are swung around in a forward direction, and out they are. You can not draw them into any other opening in the abdomen or pelvis as easily as you can in that opening.

In regard to the whole business of surgery for displacement, most operators have not demanded enough as to ultimate results. The operators who have merely followed their cases up to their next childbirth have not done enough. If no catastrophe has occurred in the next labor, they have called it well and good. That is not sufficient, however, and none but Alexander operators have done better. They have followed their cases and have carefully noted the status of their pelvic organs after subsequent labors. We have now some 70 cases, all of which have had one or two full-term births after Alexander operations. Out of that number there are no recurrences of retroversion except two that occurred in the clinic of Zweifel in Germany, and in these the technique was defective and the indications wrong.

I beg the author of the term ventro-suspension, who has done that operation more than any other man in the world, and all the gentlemen who have preferred other operations to the Alexander, to follow up their cases not merely to the next baby, but beyond that point, and to report the status of their pelvic organs.

DR. HOWARD A. KELLY, Baltimore—I am indebted to Dr. Ries for adding still another of the number of operations devised for the treatment of retroflexion of the uterus, of which I hold a list of over 50 in my hand. These have all accumulated since my first paper on this subject in 1887. I do not myself hold to any one procedure but I think a variety of different methods are valuable under different conditions. I am particularly interested in Dr. Ries' new method, as it reminds me of some work of my own not altogether dissimilar. I have, for example, in several instances, operating through the abdomen, utilized the round ligaments by cutting them off near the uterus, and then drawing the ligament over the cornu uteri and suturing it into a little incision at the back of the uterus. In another instance I attached the ligament by doubling it on itself and passing it under the tube close to the uterus and suturing it there.

My usual method consists in attaching the uterus by its posterior surface just over the top of the fundus, by two silk sutures, to the peritoneum and sub-peritoneum fat behind or above the symphysis. This is a more rational operation than that of shortening of the round ligaments, for if you will examine an anteflexed uterus when the abdomen is open, you will see that the fundus lies well anterior to the ring in the wall of the abdomen by which the round ligaments take their exit. The round ligaments have nothing to do with the support of the uterus under normal conditions except in pregnancy.

The final result of my methods is an attachment of the uterus to the abdominal wall by one or two thin peritoneal strings; the womb thus lies in a posture of easy mobile anteflexion. There should be no fixation of the organ such as follows scarification of the peritoneal surfaces.

I have made an analysis of some 214 cases of suspension, to study the effect of pregnancy on the new position of the uterus when the operation is done strictly as I desire. Out of this number 43 became pregnant and in no case was there any special difficulty with the labor. As to the permanent success of the operation, the uterus remains in its new good position in all but about 2 per cent. of the cases. I consider my operation of suspension the simplest and safest of all. It can be done through a tiny incision, and done rapidly, and I have never had a death from the operation nor any serious immediate result.

DR. A. MCDERMID, Chicago—The question of the effect of these operations on pregnancy is an important one. A short time ago I reversed this process by liberating the adhesions in a case of pregnancy. I had operated upon the young lady about two years before, removing one ovary and doing a ventro-suspension of the uterus. She afterward married and became pregnant and at about four and a half months, finding that she was suffering great discomfort from the fixation of the uterus, I opened the abdomen, placed a double ligature around the band of adhesions and dividing these, allowed the uterus to ascend. So far as I am aware, this is the first instance of this operation. Professor Hirst, in his text-book of obstetrics, recommends, when labor comes on and there is dystocia from ventral fixation, to open the abdomen, free the fixation and allow the uterus to assume its normal position. I consider it advisable to do so in the early months, enabling the uterus and its contents to develop normally.

DR. RIES, in reply—Dr. Kelly's suggestion can be carried out through the abdomen, but not through the vagina. I have thought out all the possible uses of the round ligaments in operations for retroversion, and to-day I use the method I described. There are several other methods. For instance, you can take the round ligaments and cut off a piece, then make a slit in the uterus in which you insert the ligament. By this method there is less wounding of the uterus than in the tunnel method. As to whether the bladder would be interfered with by my operation any more than it is interfered with by the normal round ligaments in the normal position of the uterus, or where the uterus has been retroverted, or where the round ligaments have become elongated, I always allow for

sufficient mobility so that the bladder can distend between the uterus and the abdominal wall.

Dr. Kelly said he could not understand how the ligaments which he makes can hold after one or two labors. He expects them to break or stretch. That is a very important admission, one which I would not make for my operation. It means that if that retroversion must be treated, the woman must be operated on after each pregnancy. Dr. Goldspohn has brought out the points which we have discussed in Chicago before. The statement that the distal portion of the round ligaments is thinner than the proximal is correct. What about it? When Dr. Goldspohn looks for the round ligament in the inguinal canal he almost invariably finds it. It is not pulled out, and if it holds on then it will hold on just as well after I have folded it on itself. Dr. Goldspohn quotes Sanger. Sanger does not say what Dr. Goldspohn makes him say. Sanger says as follows: "If other observations should prove to be a fact what I from my personal experience will not at all represent as firmly established, namely, the fact that the tubes and ovaries may become prolapsed after a vaginal celiotomy, then, etc., vaginal operation might be objectionable." That is not what Dr. Goldspohn makes him say. Dr. Goldspohn also mentions that it is difficult to operate on the appendages through the vagina, that it is difficult to do delicate conservative operations on the ovaries and tubes. Operations on the tubes are as easily performed through the vagina as through the abdomen if you only know how. The first case I operated on after the method published here had a double salpingostomy and the woman conceived three months after the operation.

As to puncturing the ovaries, I do not want to say much. I merely will say that all those little cysts that are punctured and scraped and cauterized are normal follicles, a trifle enlarged, and the microscope reveals a perfectly normal ovum in each one. I have been doing this operation for retroversion for over two years and can not, of course, know what the results will be ten years from now. It is desirable that we examine these cases again and again after labor, but unfortunately we can not always do it ourselves because patients move away from the city. It is important to mention this here because we have to call on the collaboration of all practitioners to keep the operators informed of the results of their operations years afterward.

DR. MARTIN, in reply—From the discussion it must be apparent to all that the operation for retroversion resolves itself into a matter of personal equation. One operator follows one method and succeeds because he has become proficient in it, and another follows another method and is also successful. My paper presented to-day represents five years' work. It is work that has been thoroughly tested and I have brought no case in which less than a year elapsed since the operation. Therefore, I bring results and it seems to me that results like these ought to be commended. I believe they will be.

As to Dr. Goff's criticism on the occurrence of a hernia, it is true that operations through the abdominal wall improperly performed are followed by hernia. It is also true that if operations are not properly done through the vagina we will have a hernia. A number of such cases have been reported. In the cases reported by me here to-day, I had no hernia. If a hernia had occurred, I certainly would have put it in the paper, because I did not cover up the failures.

In the treatment of diseased appendages, and in doing work on the round ligaments, the vaginal route is the route for experts, but it is ridiculous for us to expect any one who is not an expert to perform the operation as described by Dr. Ries with the same degree of facility as he does. Those of you who have done vaginal hysterectomics realize that Dr. Ries' operation is a very difficult one. While Dr. Ries might do that operation on my wife if she required it, I would not have the rank and file of surgeons do it. Why? Because the first thing would probably be the wounding of the bladder; second, the opening of the peritoneum at a point where it is difficult not to do it, and third, all the work must be done in the dark. The Alexander operation, as I have described it, has no mortality; the operation of shortening the round ligaments through the vagina or anywhere where the peritoneum must be opened, has a mortality of at least 5 per cent. and that in the hands of experts.

Dr. Humiston criticises the operations for ventral fixation and Alexander's operation where there are no adhesions. He states that no operation on the round ligaments should be necessary unless it is also necessary to open the abdomen for the purpose of doing repair work on the appendages. I do not agree with him, and I believe that no gynecologist who does much of this work will agree that every case of retroversion can be cured without an operation, even if there are no adhesions. I treat many of these cases, and every case of simple retroversion where there are no adhesions nor diseased appendages. I treat for months with the idea of causing the ligaments to shorten and to restore conditions to their normal state. I am sure that I work over these cases carefully and yet I only cure one case out of four by office treatment. The other three have to submit to some operation and I do not believe it is necessary to go into the peritoneum in order to shorten the round ligaments. In these cases where I am absolutely positive of normal appendages I shorten the round ligaments according to the method described. Dr. Humiston also criticises opening the abdomen for operations for retroversion. I did not advocate this, except where there is disease of the appendages. Of the 173 cases reported by me, the appendages were removed in all but 29. Therefore, the appendages were repaired in only 29 cases.

Dr. Gordon criticises any one who will not clean out the pelvis completely when it is necessary to open the abdomen. The reason we see many cases of removal of the appendages followed by severe sequences when the uterus has been preserved, is because the uteri were not suspended at the same time. The appendages are removed, the uterus curetted, and the abdominal wound closed. The uterus will invariably become retroverted. In every case of removal of the appendages I suspend the uterus on a strip of peritoneum so that it has a movable support, and no retroversion will result. Furthermore, I preserve to the woman a uterus which is a matter of a great deal of sentiment. The uterus is also a support to the abdominal viscera. It supports the vault of the vagina and the woman walks about without feeling that vacuum in the pelvis that she invariably feels if the uterus is removed. If you remove the uterus entirely it also means the removal of the top of the vagina, and if you do this, the vagina is shortened.

REPORT OF A CASE OF UNUSUAL TERTIARY MANIFESTATIONS.*

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PHILADELPHIA.

The patient, H. H., aged 22, had scarlet fever, followed by a severe attack of Bright's disease, at the age of 3 years. He made a speedy recovery, and was in good health up to September, 1899, when he contracted syphilis, while at school. The disease was recognized by his school physician, and for several months he was kept on the usual anti-syphilitic treatment. Upon his arrival home, however, in the summer of 1900, he decided not to reveal the fact of his infection, even to his family physician, and he gave up all medication. In August he enlisted in the war with Spain, and while in camp contracted intermittent fever. When he returned home in the autumn, he was much debilitated and had several paroxysms of what his family physician, in the absence of a history of specific disease, and, indeed, not suspecting it, on account of his long acquaintance with the family and the high moral character of the patient, diagnosed as malaria

* Read at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Laryngology and Otology, and approved for publication by the Executive Committee: Drs. Emil Mayer, W. E. Casselberry and J. N. Mackenzie.

and treated accordingly for several weeks. Failing, however, to get the usual satisfactory results and observing that the patient continued to lose flesh and strength, he decided to get a specialist's opinion on some of the more important features of the case, and therefore referred him to two of Philadelphia's leading physicians and medical teachers, the one an ophthalmologist, and the other a general diagnostician.

The ophthalmologist informs me that the visual acuity was normal; there were no external evidences of disease, except some prominent baggy swellings on the under lid of each eye; the iris was healthy, and the media were clear. In the right eye the following striking picture of neuro-retinitis was revealed to the ophthalmoscope: the nerve-head was swollen, its summit three diopters above the general fundus level; the edges of the disk were obscured by a grayish-red, striated exudate, and the retinal veins were swollen and tortuous. For a distance of two or three disks diameters from the optic-nerve head, the nerve-fiber layer of the retina was edematous, while around the macula lutea was a delicate, star-shaped halo, made up of radiating white lines in the superficial retinal layers, such as are characteristic of Bright's disease. In the left eye a similar picture of neuro-retinitis, but of much greater intensity, was observed and the star-shaped halo of radiating white lines surrounded the macula lutea. There was, in short, a severe neuro-retinitis, with the lesions at the center of the eye-ground, that have been regarded as pathognomonic of Bright's disease. He also informs me that the ophthalmoscope failed to reveal any of the classical ocular symptoms of specific disease, and that it was the first case that had come under his observation in which the characteristic fundus picture of albuminary retinitis was simulated by the retinal lesions of syphilis.

With the above history, as described by the family physician and the ophthalmologist, the patient was referred to a distinguished diagnostician for diagnosis and for recommendations as to the treatment. In explanation of the diagnosis, it should be borne in mind that he was confronted with the following history: Scarlet fever at 3 years of age, followed by a severe attack of acute Bright's disease, from which he made a speedy recovery, and continued in good general health up to September of last year. He then had an attack of what was supposed to be malaria, in which he lost flesh and strength, was weak and nervous, had headache, and some cough, with considerable nasal and faucial catarrh.

The examination of the blood revealed, hemoglobin, 80 per cent.; red blood corpuscles, 4,800,000, and white blood corpuscles, 5600. The examination of the urine, mixed specimen, revealed a trace of albumin, some pus, hyaline and epithelial casts, and no red corpuscles. Examination of the chest failed to show any active thoracic disturbance.

The above symptoms, namely, anemia, emaciation, asthenia, albuminuria, tube-casts, and an early history of acute Bright's disease, grouped with the eye-ground conditions, as described, presented a fairly good clinical picture of interstitial nephritis. It will be remembered that the history of specific infection was, at this time, known only to the patient and his physician at school.

In February, of the present year, I was called in consultation, by long-distance telephone, to see the patient, who was then suffering with exacerbated throat symptoms. He was still losing flesh, weak and anemic; he had a cough with expectoration and had considerable pharyngeal catarrh with painful deglutition. The physician in charge now feared that he was dealing with a case of tubercular laryngitis. Before I arrived, however, the patient had grown anxious about himself and called the attention of his physician to a deep, sharply-defined ulcer in the glans penis, and made a confession of his previous infection, dating back about eighteen months.

With these new developments in the condition and history of the case, my own work was comparatively easy. A pharyngoscopic examination revealed a single ulceration confined entirely to the lingual tonsil and involving the major part of this gland. The character of the ulceration was typical of the tertiary form of syphilis, and this fact, together with the history as now revealed, made the diagnosis practically certain, and we immediately placed him on the usual mixed treatment, with most satisfactory results. The ulcerative processes at once lost their acute character and began rapidly to heal.

Beyond the usual protective and antiseptic dressings for the penis, and a cleansing gargle for the pharynx, no local treatment was used, and within a few days the patient was out of bed, his appetite increased enormously and he was able to swallow without any difficulty whatsoever. He gained in weight and his general physical condition almost immediately began to approximate the normal.

The following are some interesting features of the case and some conclusions that may be drawn from it:

1. It illustrates some of the difficulties of diagnosis in syphilis when the history of infection is withheld.

2. The case is interesting, because of the absence of the usual secondary manifestations.

3. This condition of the eye-ground is rare in syphilis, so much so that the disease was not suspected by the ophthalmologist consulted.

4. So far as I know, it is the first case to be reported of syphilitic ulceration confined to the lingual tonsil.

DISCUSSION.

DR. W. E. CASSELBERRY, Chicago—I would supplement the essayist's description of syphilitic ulceration of the lingual tonsil by mentioning a case in brief. Syphilis was acknowledged, but notwithstanding this, from a mistaken microscopic examination, the man had had performed a pharyngotomy and had a large mass removed under the supposition that it was carcinoma. Ulceration continued, until under my observation it healed completely with anti-syphilitic treatment. The ulceration was confined to the lingual tonsil and immediate surrounding parts of the base of the tongue. I think if we examine carefully we will find this lymphoid tissue at the base of the tongue is invaded not infrequently, although usually in combination with infiltration or ulceration of the other lymphoid structures. Ulcerating condyloma is one of the most characteristic manifestations of syphilis, often appearing within a period of six months to a year after the primary infection. It is easily confounded with true gumma, which rarely appears that early. It is capable of causing considerable destruction of lymphoid structures early in the history of syphilis, whether the lingual faucial or pharyngeal tonsil, but the ulceration is not as deep and extensive as that which results later from regular gumma.

DR. GEORGE C. STOUT, Philadelphia—The case of Dr. Makuen recalls to mind one referred to me about a year ago by one of our Philadelphia physicians. It was that of a woman 40 years of age, a trained nurse, which the physician had been treating in a desultory way for some months previous, but which failing to respond to "the usual remedies," was referred to me. The fact that she was a trained nurse may explain why her history had not been more carefully gone into.

The first glance showed mucous patches on her tongue, tonsils and buccal mucous membranes. She also had syphilitic eruptions on both elbows and on both legs. She was single and of undoubted good morals so far as one can tell. She gave the following history: A year previously she had nursed her sister-in-law through a confinement, after which she had relieved the milk of an "abscessed" breast by sucking out the milk, "there being no other means at hand." In a few weeks her mouth became "sore" and this was followed shortly by a general eruption over her body, which, however, disappeared in some months only to be followed by her present stubborn sore throat. Further inquiry showed that the sister-in-law was suffering from syphilis. This formed the complete chain of evidence with the resulting disappearance of symptoms after anti-syphilitic treatment of the nurse. Here, then, was a case of syphilis going from house to house nursing the sick while in the contagious stage and who thought she was rendering the best medical attention.

DR. MAKUEN, in reply—The case was interesting to me for two reasons: 1, because the real disease, syphilis, and the manifestations of its infection had escaped entirely the observation of five skilled physicians; and 2, because with no apparent secondary symptoms whatever it appeared in the form of a tertiary ulceration confined strictly to the lingual tonsil. The report also emphasizes the importance of obtaining accurate histories in these cases and the serious consequences that may follow a failure to gain the confidence of our patients. If, as Dr. T. Duncan Bulkley suggests, we could remove from the popular mind the stigma attached to this condition by teaching the fact that it is an infectious rather than a venereal disease, we might be able to get, in many instances, a more accurate history.

SYMPTOMS OF TYPHOID FEVER IN INFANCY AND CHILDHOOD*.

J. P. CROZER GRIFFITH, M.D.
PHILADELPHIA.

A number of articles on typhoid fever in children have appeared within the last few years. Among these may be mentioned those of Schavoir,[1] Adams,[2] Weill and Lesieur,[3] Haushalter,[4] Glenard,[5] Variot and Dévé,[6] Jacobi,[7] Roemheld,[8] Morse,[9] Stowell,[10] and others.

I have also gone into the matter with some care in a previous publication,[11] and I shall therefore on this occasion make no effort to give any statistical consideration to the symptoms of the disease as seen in children, but content myself with a brief expression of what seems to me to represent most generally accepted opinions, and more especially my own views on the subject.

The symptoms of typhoid fever as occurring in children often differ materially in many respects from those seen in adult life. To insist that the cardinal symptoms must always be present in early life would lead us into frequent failures to make a diagnosis. It was, indeed, this tendency to impose the symptoms of one period of life on another period which largely accounted for the former total failure to recognize typhoid fever in infancy; an error now rapidly disappearing with the employment of the test for the serum reaction of the disease. Equally important, too, in accounting for the present more frequent recognition of typhoid fever in infancy, is the fact that we are now more on the alert to detect it.

Anyone who gives the literature of the disease a careful, unprejudiced study can not fail to be convinced that the affection is far from rare in infancy; not that it is relatively as common as in adult life, or even as in childhood, but that it is an affection which anyone thrown much with disease in infancy is liable to run across repeatedly. This is certainly my own experience, and I have no reason to believe it is unusual.

Two methods of onset may be called characteristic of typhoid fever in early life. In the first the peculiarity is the indefiniteness. The great degree of malaise and fatigue which render the adult in most cases unable to be about is usually absent in childhood. The walking-typhoid of adult life is the rule in children, so far as onset is concerned. It is a common experience in dispensaries to have a child brought complaining only of loss of appetite and slight indisposition, probably with some headache. The physician is the first to discover that there is fever, the mother having noticed none. Visits are repeated on several days, the temperature keeps up, and finally, based principally on exclusion, the diagnosis of typhoid fever is made, although the child scarcely feels ill. At last, perhaps, the development of spots, or the presence of the serum reaction makes the diagnosis certain, and the child is sent to bed on general principles, and not because it wants to go.

The second form of onset is characterized by its suddenness. The child is in some cases taken with vomiting and has decided fever from the start. In other cases there are two or three days of fever and malaise, and then, perhaps, the roseola is discovered. In some of these latter cases the suddenness is only an apparent one, the onset having really lasted longer, but the earlier symptoms having been so mild that they were overlooked.

In infants the symptoms, both the earlier and the later ones, are most vague, especially as at this time of life elevation of temperature is so common from slight or undiscovered causes. Here the diagnosis is difficult, even after the disease is well under way, and very frequently only the presence of the serum reaction will distinguish the case from one of indigestion, enteritis, or influenza.

The course of the disease, as a whole, shows another peculiarity in children, in that the duration is, on the average, distinctly shortened. Fourteen to twenty days would be a general average length; perhaps, on the whole, about seventeen days. Abortive attacks lasting only a week, or a trifle more, are quite common in childhood. The whole course of the disease is, as a rule, much milder than in adult life. This is borne out, too, by mortality statistics, from which we can fairly place the mortality in children at from 3 to 5 per cent., probably nearer the former than the latter figure. Children under 5 years are less liable to die than those above it. This seems to be the generally accepted opinion. I note an exception in the recently expressed view of Glenard that the mortality in infancy is high.

We may with advantage take up the characteristics of the different symptoms, whether occurring early or later in the attack.

The typhoid roseola appears to be nearly or quite as frequently present as in adult life. It is but right to say that this is contrary to the experience of many observers, yet is in accord with many others. Many patients do not exhibit it, or at least it is not discovered in them. In others it is very abundant. I have seen it on the limbs, trunk and face. Weill and Lesieur describe a form which they denominate "exanthematic," on account of the great preponderance of rose spots

* This and the following three papers were read in a Symposium on Typhoid Fever at the Fifty-second Annual Meeting of the American Medical Association, in the Section on Diseases of Children.

as a symptom. The division does not seem to me to be justified.

In a very few cases I have seen herpes labialis develop, but in so few that I can not state whether this is more likely to occur in childhood. At any age it is certainly very rare. Desquamation has been described by French observers as occurring frequently. Various accidental rashes have also been described, such as a rubeoloid and a scarlatinal eruption. They offer, however, no peculiarities in childhood.

Enlargement of the spleen is probably always present, although often, as in adult life, not discoverable. In the majority of cases this enlargement can be detected if sought for at the proper time and when the abdomen is not too much distended.

Respiration offers nothing peculiar, nor do affections of the respiratory apparatus. The statements of writers regarding the frequency of epistaxis in childhood vary very considerably. It is probably nearly as frequent as in adult life. The pulse is often unusually slow as compared with the rate which one would expect for the same elevation of temperature in other diseases. This is, as we know, also true of typhoid fever in adults.

The temperature in typhoid fever in children runs a course similar to that in the adult disease. It is, however, subject to still greater variations in early life. Not infrequently it rises rapidly without the usual step-like ascent. Often it remains high at the acme of the disease with little tendency to morning fall. Very often it falls toward the end of the attack with much greater rapidity than in adults. Indeed, the fall may be almost critical at times. The remittent character of the last part of an attack of adult typhoid is very liable to be absent in children. Quite certainly, as already pointed out, the temperature continues elevated for a decidedly shorter time than in adult life.

The tongue is not as liable to become dry as in adult life. In some instances, however, especially in later childhood, this symptom is not infrequently seen. Vomiting is a very common initial symptom, much more so than in adult life. Even later in the disease it is sometimes a most troublesome symptom. I have seen it the direct cause of death. Diarrhea is, in my experience, much more liable to be absent than present. This is the experience also of many others, especially in the cases occurring in early childhood. Certainly diarrhea is not more common than constipation at any period of childhood. Abdominal distension is not often a troublesome symptom, although often present to a considerable extent. This is in sharp contrast to the tympanites so common in adults. There are exceptions to this rule, and in these the distension may be excessive. Abdominal tenderness is seldom marked. Hemorrhage is of very rare occurrence. When it does take place it is nearly always in cases in later childhood, and especially in those over 9 or 10 years of age. I have seen it in one or two cases only, and then not severe. However, severe and even fatal hemorrhage has been reported. The infrequency of hemorrhage doubtless depends on the much less pronounced development of intestinal lesions, generally, but not always, characteristic of childhood. The same may be said of perforation, a very uncommon occurrence in typhoid fever in childhood, and almost never seen except toward the end of this period. I can recall perforation in only three or four cases in my experience; the youngest, I think, was 9, the oldest 12 years. Yet it would appear from medical literature that perforation may take place under the age of 2 years.

One of the characteristics of typhoid fever in children is the tendency for the nervous symptoms to predominate over the intestinal. This by no means implies that nervous symptoms are more common and more severe in the disease in childhood than in adult life. On the contrary, in the majority of cases in childhood they are trifling or absent. Extreme torpor and the tendency to coma, coma vigil and carphology occur much less often than in adult life. They are especially rare in young children. Headache is a common symptom, especially at the beginning, but no more so than in adults. Slight delirium is apt to occur, especially at night. A certain degree of apathy is very common and often one of the most characteristic symptoms, especially in young children.

A condition not infrequently seen at the beginning, and liable to cause confusion in diagnosis, is that of pseudomeningitis. Meningitic symptoms do, it is true, occur in adult typhoid also, but certainly less characteristically. As a rule, the diagnosis can be made easily, but I have seen typhoid fever begin in children with all appearances of acute leptomeningitis, and lead for a time to an entirely erroneous diagnosis. Aphasia is a nervous symptom rather to be considered as a complication. It is generally said to occur more frequently in childhood.

The discussion of the complications and sequels, as of the diagnosis, is beyond the province of this paper.

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THE DIAGNOSIS OF TYPHOID FEVER IN THE LABORATORY.

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Before taking up the subject which has been assigned to me, I wish to protest against the separation of laboratory and clinical methods in the diagnosis of this disease. They should not be thought of separately, but together. Both are fallible, and both should be used understandingly and with due recognition of their limitations. Otherwise they may well lead to erroneous conclusions.

The various laboratory tests which are used for the diagnosis of typhoid fever are, briefly, as follows: The Widal reaction; examination of the urine and feces for typhoid bacilli; examination of the blood for typhoid bacilli; examination of rose spots for typhoid bacilli; the diazo-reaction in the urine; the leucocyte count; tests which show the presence or absence of other diseases. The value of these tests is very unequal. Some are easy to carry out, some difficult. All have their limitations. As this, however, does not seem either the time or place to go into the details of the performance of these tests, I shall confine

myself entirely to a consideration of their value and limitations.

THE WIDAL REACTION.

The Widal reaction is present in at least 95 per cent. of all cases of typhoid fever. It seldom appears, however, before the second week of fever, and may be delayed even until convalescence. In a small number of cases it may never be present; in others it may be intermittent. As it seldom appears before the beginning of the second week, the test is of little value up to this time. As it often appears late in the disease, and as it may be present only intermittently, typhoid fever can not be excluded by a single or even by repeated negative tests. Repeated negative tests, however, are very strong evidence against the existence of typhoid. The reaction may persist in the blood as long as twenty-one years after recovery from typhoid. Hence, a positive reaction in the absence of other symptoms of disease is not diagnostic of typhoid. A positive reaction, if the patient has not previously had typhoid, is almost certain proof of typhoid. A positive reaction may occur, however, in other diseases than typhoid. This error does not exceed 2 per cent. A negative reaction followed by a positive reaction in a dilution of 1 to 50 is absolute proof of typhoid.

The Widal reaction occurs under the same conditions and with the same limitations in children as in adults. There is some evidence to show, however, that in them the reaction appears earlier, is feebler, and persists for a shorter time than in adults. Owing to the comparative mildness and to the large number of atypical cases of typhoid in children, the Widal test is exceptionally important in them as an aid to the diagnosis of this disease. It is of especial value in two ways: 1, in ruling out many cases of gastro-intestinal disorders which might otherwise be mistaken for typhoid, and 2, in making a positive diagnosis possible in many mild cases which might otherwise pass unrecognized.

The Widal reaction appears in infantile typhoid as in that of older children and adults. The presence of the Widal reaction in infancy, especially in early infancy, is of less diagnostic value, however, than in adult life, as the reaction may be transmitted from the mother through the placenta or through the milk. The agglutinating power may be transmitted to the infant through the placenta, not only during the course of or convalescence from typhoid, but even when pregnancy takes place years after recovery. It is probable that it may also be transmitted through the milk after many years. When transmitted through the milk, however, it does not persist more than a week after the cessation of nursing. In early infancy, therefore, a positive Widal reaction is of somewhat less diagnostic value than in older children and adults. If the mother has had typhoid, and especially if she is nursing the infant, it should be looked on with some suspicion unless associated with other characteristic signs of typhoid. Examination of the mother's blood and milk and the cessation of breast-feeding will then assist in estimating the true value of the reaction in the infant.

This test, requiring, as it does, the maintenance and preparation of a fresh bouillon culture of the typhoid bacillus every twenty-four hours, is not a practicable one for the general practitioner. The boards of health of many states and of most of the large cities now make this test for the practitioner. All that is required of him is to send them a few drops of dried blood. This certainly does not appear impracticable, or even difficult. The laboratory can report on the blood in less than an hour. That certainly seems rapid enough.

EXAMINATION OF THE FECES FOR TYPHOID BACILLI.

Typhoid bacilli have been found in the stools of typhoid fever patients by many observers. They have been found in some cases as early as the third or fourth day after taking to bed. They have not infrequently been found in the stools before the appearance of the Widal reaction in the blood. At least three days, and more often four or five days, are required to prove their presence, however. Although they are as a rule present in the stools before the Widal reaction appears in the blood, yet, so much more time is required for their demonstration that but little time is gained. The two tests, therefore, are of nearly equal value as regards early diagnosis. In cases in which the appearance of the Widal reaction is delayed, examination of the stools may render an earlier diagnosis possible. The examination of the feces for typhoid bacilli requires a complete laboratory, however, and much expert knowledge. It is entirely impracticable for the practicing physician and is not, so far as I know, carried on as a routine practice by any laboratory in this country.

EXAMINATION OF THE URINE FOR TYPHOID BACILLI.

Typhoid bacilli can be found in the urine in from 20 to 30 per cent. of all cases of typhoid at some time during their course. As a rule, they do not appear in the urine until late in the disease and after the appearance of the Widal reaction in the blood. In a few cases, however, they have been demonstrated in the urine before the appearance of the Widal reaction. The isolation of the bacilli is less difficult than from the stools, requiring as a rule but two days. The limitations to the use of this test are otherwise the same as in the case of the stools.

EXAMINATION OF THE BLOOD FOR TYPHOID BACILLI.

Typhoid bacilli have been cultivated from the splenic blood, obtained by puncture, by several observers. This test is deserving of no consideration, however, as puncture of the spleen is an entirely unjustifiable procedure.

Recent observers have cultivated the typhoid bacillus from blood taken from the veins of the arm in 80 per cent. of cases of typhoid. They used from 15 to 20 cubic centimeters of blood. The results of other observers have been much less satisfactory. There are no data as to the time at which the bacilli first appear in the blood, and hence no means of comparing the value of this method with that of the Widal reaction. This test requires a complete laboratory, technical knowledge, and at least two days. At best it is positive in only 80 per cent. of the cases, compared with 95 per cent. of positive reactions with the Widal test. Tapping a vein is a much more serious and delicate procedure than pricking the ear. The results, therefore, hardly justify the employment of this more complicated method in preference to the Widal reaction except in exceptional cases, even if it were not impracticable for the practitioner.

EXAMINATION OF THE ROSE SPOTS.

Several observers have recently succeeded in cultivating the typhoid bacilli from the rose spots. If five or six spots were excised positive cultures were obtained in almost every case. This method is not applicable before the appearance of the rose spots or in those rare cases in which there is no eruption. In a series of com-

parative tests the bacilli were almost invariably obtained from the rose spots before the appearance of the Widal reaction. They were found, on the average, six days before the Widal reaction. The bacteriologic examination of the rose spots seems, therefore, to be almost, if not quite, as accurate a method of diagnosis as the Widal test and, moreover, to afford a positive diagnosis earlier in the course of the disease. The excision of several rose spots under aseptic precautions is, however, a somewhat complicated procedure. Moreover, the cultures must be made at once and must be examined by an expert with a laboratory at his command. These facts render this method, accurate as it may be, of but little value to the practitioner.

THE DIAZO-REACTION.

This test is a simple one and can be easily performed by any one with but little expenditure of time. The diazo-reaction can be obtained in the urine of most cases of typhoid, often appearing early. As it is also often present in tuberculosis, septicemia and other febrile diseases, the very conditions with which typhoid is most easily confounded, it is of but comparatively little value.

THE LEUCOCYTE COUNT.

The number of white corpuscles in the peripheral circulation is subnormal throughout the course of typhoid. The average number per cubic millimeter is 5000 or even less. Any increase above the normal number means some complication, such as hemorrhage or inflammation, or some outside influence, such as cold bathing. Together with the dimunition in the number of white corpuscles there is a relative increase in the proportion of mononoculear cells.

The estimation of the number of white corpuscles is a simple procedure, requiring but little time or experience, and is a perfectly practicable method of diagnosis for every one. It affords information of but little less value than the Widal reaction. The differential count of the white corpuscles is hardly more difficult but is rarely necessary.

In using the leucocyte count in the diagnosis of typhoid fever from other conditions, it must be remembered that the general rule applies here as elsewhere, namely, that the white count is only of value when the diagnosis lies between two diseases, one of which has a leucocytosis and one of which has not. For example, the white count is of no value in the differential diagnosis between typhoid and malaria, neither of which has a leucocytosis. On the other hand it is of great value in the diagnosis between typhoid and septicemia, the latter having a leucocytosis while typhoid does not. The diagnosis of typhoid, in the absence of any inflammatory complication or hemorrhage, must be viewed with much suspicion if the white count is above 10,000. The diagnosis of typhoid, made in the face of an inexplicable leucocytosis, is almost invariably wrong. An increase in the number of white corpuscles, in a case known to be typhoid, shows the presence of some complication, usually inflammatory. The information thus afforded should never be disregarded. The white count promises to afford a means of early diagnosis of perforation or even of threatened perforation. If, in addition to the pain in the abdomen, there is a progressive increase in the number of white corpuscles an actual or threatened perforation is almost certainly present.

TESTS WHICH SHOW THE PRESENCE OR ABSENCE OF OTHER DISEASES.

Although subordinate to the tests which demonstrate the existence of typhoid fever, those which reveal the presence or absence of other diseases are of great value in differential diagnosis. The examination of the blood for the plasmodium malariæ when there is a question of malaria and lumbar puncture when there is a question of meningitis are among the most important. The value of the leucocyte count has been already mentioned. Other tests will suggest themselves in special cases.

CONCLUSIONS.

Laboratory and clinical methods of diagnosis should not be separated. Both are important and both fallible. Neither is complete without the other. Laboratory methods must be used with due recognition of their value and of their limitations. Otherwise they may lead to erroneous conclusions. The Widal reaction and the leucocyte count are the most useful of the laboratory tests for the diagnosis of typhoid fever. They are easily carried out and within the reach of all. Certain other methods are of equal or even greater value but are impracticable for everyday use.

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THE TREATMENT OF TEMPERATURE BY DRUGS.

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Collective statistics of typhoid fever in children have placed the mortality rate at or near 5 per cent. Regarding treatment, no especial records have ever been presented, except those that may be questioned by reason of their representing certain plans of treatment, concerning which the profession has but little knowledge. Hence, as now constituted, it is impossible to substantiate certain classic methods by unquestioned results, and to arrive at some accurate conclusion, the statistical records of this disease in the adult should be considered for comparison.

As a diagnostic implement in the hands of the physician, the thermometer retains the first place, and, by its constant use, much reliance has been placed on what it shows, and its value remains unquestioned. By its use alone, we are very often enabled to diagnose typhoid fever, when many of the specific signs are late, or are not marked so as to be easily recognized.

THE AVERAGE DURATION OF THE FEBRILE MOVEMENT IN CHILDREN.

When using drugs in typhoid fever it is always well to know for what purpose. Hence, when giving drugs for fever this is a pertinent question: Is it given for the disease pure and simple, or for a complication? In young children the fever often lasts only from 8 to 14 days, according to Morse. The average course under 10 years is 19.3 days, and from 10 to 15 years, 22.6

days. After the age of 10, this course is much like that of adults.

ITS SIGNIFICANCE AS A DIAGNOSTIC SIGN, AS WELL AS A PROGNOSTIC SIGN.

Typhoid fever is perhaps the only disease in which the temperature runs higher in older than in younger children. Subnormality obtains at the end of the course, and a rise is due to intestinal or other disturbances. It may range from 101 to 106, and give no extraordinary disturbances. If the fever be high and long continued it will do harm by its influence on the nervous system. If the thermometric record shows a regular course it signifies a normal fever. If, however, it should drop suddenly we have the very same significance as in an adult—a hemorrhage cause. If the fever continues longer than the average time it is significant of a complication. If after the complication is recognized and treated, the fever rises again it has the same meaning—another complication. If it continues and is always present, never reaching the normal, and not following the natural course of typhoid fever, it may be due to an entirely different state of affairs, such as tuberculosis or the like. Therefore, while the thermometer may be useful in denoting the general condition of the child as regards the fever, it also helps us to discover some other reason why our patient does not recover so quickly, or why it should die.

ITS CAUSE, DANGERS, AND RESULTS.

The causes of the febrile movement may be said to be, the fever and a complication that may arise. If the fever lasts for a time and suddenly increases, we may have pneumonia. Or if the fever process changes, and, instead of the highest point being reached at night, it is recorded in the morning, we may expect tuberculosis. It is thus seen that the fever process is not entirely devoid of special significance, and that it does not simply record the progress of the disease, but it will tell us what the results will be, if too long continued.

A thorough knowledge of the febrile movement, its cause, and dangers is as necessary as of the drugs to be used. In children, the peculiar behavior of the febrile movement is as significant as in adults, the sudden fall denoting a hemorrhage, etc.

THE TREATMENT BY DRUGS.

In choosing a remedy in typhoid, the following significant fact must always be conspicuous: The simple disease is a self-limited one. I take it, therefore, that as a disease has a limited course, it should as a rule not prove fatal if the patient has the strength to exist so long. To say that we can "abort it," or curtail its length, is a misnomer. It is misleading, a delusion, and should never exist in expressing results in true typhoid.

We can, by the judicious application of our remedial efforts, modify a symptom, and change a dangerous one into one devoid of danger. But to attempt to prove by statistics that we cured a certain number of cases and by this or that mode of treatment, and then, to describe such cases and show that each one ran its prescribed course, is an error, and should be corrected. It may be true that under a certain plan of treatment, more recoveries are recorded than under another plan, but it is most strange that always the best results are obtained by the originator, although the experience of others may also prove this to be so. Careful investigation proves that no special specific virtues can be designated. For this very reason, I know of no drug which has stood the test of time or an impartial judgment, and I have used many. Some drugs are superior to others, but to assert that any drug specifically controls the temperature in typhoid fever would be to make an assertion that is untrue, and one that has never been proven by any experiment that I have undertaken.

During the past year I have investigated the subject of the treatment of typhoid fever. I entered on my work with all the enthusiasm and energy which this symposium inspired. If there was, or is, any remedy that I could say is the one to be recommended here, I felt that this work would be amply repaid. With an ambition to succeed, and an earnest desire to discover, I left the beaten path of conservatism, and entered on the one, which for the want of a better name I will designate, Liberalism. Here was permitted every latitude, and it gave me the chance, when opportunity offered, to use any of the so-called remedies which were offered for the treatment of typhoid fever, or the fever as a symptom. I did not limit the work to my own practice, but asked the assistance of my friends, the most energetic of whom was Dr. Alexander Klein of Philadelphia, whose knowledge of pathology and bacteriology helped greatly. I endeavored to make the tests as numerous as possible, and our methods as dissimilar as possible, though the results, in all cases, were the same. Therefore, my conclusions may be termed the conclusions of all who took part in this work.

The drugs first used were the so-named antipyretics, the coal-tar derivatives. The names are familiar to you all, comprising, antipyrin, phenacetin, acetanilid, thermol, terpin-hydrate, etc. I have used all these drugs, and although I must conscientiously say that I have found that some influence the fever, that is, reduce its height, yet I can not claim any particular virtue for any one drug. One of the so-called specific compounds for the treatment of typhoid fever took my fancy. It is on the order of the Woodbridge treatment, with numbers 1, 2 and 3. I followed its use as ordered by the originator, and the result was a failure. Indeed, I might add, that no matter what the name of any drug, if it was claimed that it had specific virtues in the treatment of the fever, or particular influence on the febrile movement, I would use it with such care as I could devote to a clinical experiment, and the results were always the same. The fever could be lowered and it might be kept low, as long as I used the remedy, but if persisted in too long or in too large a dose, it might cause a collapse. The only conclusion I have reached from the use of these specifics is, that their originators were neither clinician nor therapeutists, and that, if the report of cases were typhoid, there must be a mistake in the diagnosis. In true typhoid these so-called specific remedies had little or no influence. I saw some surprising results in using these antipyretics. For instance, with antipyrin, I have never seen any alarming depression, probably my dosage was too small; but with acetanilid, supposed to be free from this evil, I saw the result twice.

In the choice of a remedy of this group, I noted that many were ruled rather by routine than any distinctive choice. Hence, I met several physicians who believed in phenacetin, while the newer remedy, thermol, has a surprising number of adherents. The old-time mixtures—the fever mixtures—are still in vogue, and I can not say that, in disregarding these, we advanced greatly. In the use of the tincture of aconite or the like, there was never any fear of sudden heart

failure, and for conservatism, it stands pre-eminent. I had several cases go through a typical typhoid with no other treatment for the fever than the well-known neutral mixture of the U. S. Pharmacopeia. In the Brand treatment, this mixture has its use, and as I have the greatest faith in diaphoresis as a remedy in typhoid fever, I mentioned it as a treatment. Quinin, either in mass or in divided doses, proved inert. I have never seen it influence the fever, and it does more harm than good. In children, it should never be used, and, for the purpose of treating the fever, it has never shown that influence which the coal-tar products always exhibit.

My method of applying drugs in the treatment of typhoid fever was as follows: If I found after three days' use of any drug that it ceased to influence, I immediately dropped it. If I found that for a particular type, a drug was useful, I might continue its use as long as the symptom lasted. If I found that the drug acted beneficially, as in controlling pain, but the fever continued, I would hold to this particular drug and treat the fever. How? I will mention further on. If I found that an antipyretic would lessen fever and pain, I would continue its use, even into convalescence.

Following this as my rule in practice, my experience with so-called specific methods is limited. For, as soon as I found that the influence promised was a fallacy, a dream, or as one may curtly say, a delusion and a snare, I immediately dropped it. Thus I might summarize my experience and conclusions: Having used the many methods of treatment, claimed as a specific for the treatment of typhoid fever, or the fever as a symptom, I would formulate the following as a good rule to follow: One must have a distinct understanding of the meaning of the fever in typhoid, and its treatment by drugs. The chief question is not "what drugs are to be used?" but "when is it necessary to interfere?"

What is the meaning of the fever; and, why is it that this disease always presents a fever record? That the fever is but a protective reaction of nature, in order to combat the effects of the typhoid bacillus and its toxins, by attenuating the former, and counteracting the latter in aiding the speedy development of the antitoxin, is the opinion of all.

We know that the typhoid bacillus thrives best, and is most virulent, at the normal temperature of the human body, and that higher temperatures interfere, not only with its development, but even with its virulence.

Should not we consider it therefore a grave mistake to attempt the reduction of temperature evidently so highly beneficial within certain limits?

Would it not seem a very serious undertaking to treat typhoid fever by antipyretics, as a routine, having regard for neither the effects of the temperature, nor of the physiologic effects of the drug? What then should be our rule of practice? If a temperature, not too high, is of benefit, a temperature, long continued, is harmful. A temperature too high demands prompt interference, for it is well known that hyperpyrexia will produce tissue degeneration. That it will do so sooner in adults than in children is a well-known fact, and that some constitutions will more ably withstand a temperature that is harmful to others, all of you will admit. It is, therefore, imperative to individualize, to interfere only as soon as we consider the temperature higher than is compatible with the safety of our patients; i. e., high enough to produce tissue degeneration.

The ideal way of interfering would certainly be by an antitoxic serum. Lacking this at the present time, I consider Brand's hydrotherapy the foremost, be this in the form of a "tub," or "pack," or "sponge," according to the individual case, and the only method to be used for the reduction of hyperpyrexia.

Other antipyretics I have mentioned, only in order to condemn them, for they possess no specific virtue either in controlling the course of the disease, or influencing a hyperpyrexia, and, most certainly in a normal course, the necessity of an interference should always be a question.

A CASE OF MULTIPLE GANGRENE.

ASSOCIATED WITH CHOLANGITIS AND ADENOMA OF THE LIVER COMPLICATING TYPHOID FEVER.

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It is the object of this paper to report a case of multiple gangrene during an attack of typhoid fever. In addition to the gangrene, it was found upon autopsy that the child had suffered from a catarrhal cholangitis. An adenoma of the liver was discovered; this was an accidental finding.

History.—A. B., aged 21 months, female, came under observation on the fourth day of its illness. She was admitted to the Children's Ward of the Michael Reese Hospital, Sept. 25, 1900. Four days before admission the patient became ill, with headache and fever; she refused food, was dull and listless, slept most of the time, and her bowels were constipated.

Family History.—It is of great interest to note that the father of the child was ill in the male ward of the hospital at the same time, with a well-marked case of typhoid fever. The mother was well. The little patient is the only child.

Examination.—The temperature on admission was 103 F., pulse 130, respirations 28. The tongue was coated with a white fur. The examination of the thoracic organs was negative. The abdomen was tympanitic, the liver somewhat enlarged and the spleen was palpable. The extremities were negative. The reflexes were normal. The Widal reaction was positive.

On September 29, four days after admission, it was noted that there was a swelling about the face, over the hands, the legs, and the ankles. There was no pitting on pressure. The legs were held rigid. Palpation of the joints caused no pain. The pulse during the day was weak.

On the following day it was noted that the abdomen was extremely tense, the extremities were swollen a trifle more. The patient took nourishment with difficulty; the bowel movements were frequent and offensive. The urine was examined and found to be absolutely negative, containing neither sugar albumin nor casts.

From this time on, the temperature diminished somewhat, the swelling of the extremities and the distention of the abdomen became less, and for a number of days the child seemed decidedly better, though the temperature remained constantly high.

On October 7 herpes labialis developed. The pulse at this time was irregular and weak; it varied from 128 to 168 per minute. A note on the history sheet calls attention to the following: "There is a peculiar eruption on the back, neck and extremities. The eruption begins as papules, very soon becomes pustular and shortly thereafter areas of gangrene remain."

On October 11 it was observed that bronchial râles and some exaggerated breathing were present. The child grew weaker, it was difficult to feed her, she refused food as well as medicine. On October 12 she died.

THE AUTOPSY.

Distributed over the anterior surface of the neck, the lower portion of the face, the lateral aspect of the thorax and the entire back, also over the inner surface of the thighs and the upper third of the legs, are a number of areas varying in size from a pin-point to a silver quarter, showing in the various stages, papule, pustule, and ulceration with gangrene. This process is most marked on the back. There occurs on the back an area the size of a quarter, which is circular in shape, shows a great loss of skin, and has a considerable depth.

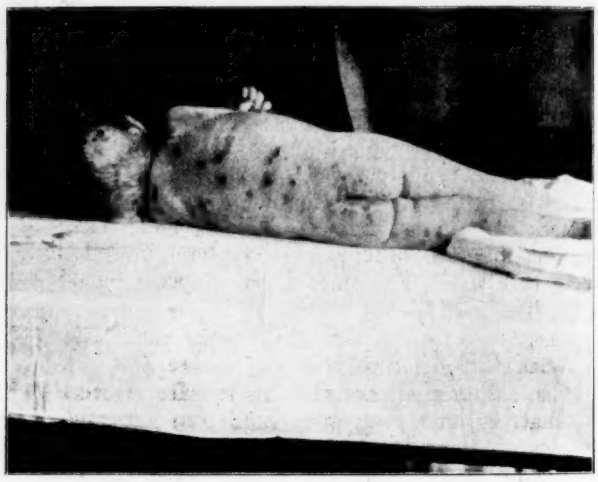
Heart.—The pericardium contains a small quantity of clear fluid and is smooth and shining; the right heart is dilated, the myocardium is pale and flabby. The pleural cavity is empty, the pleura negative.

Lungs.—The posterior portion of the lungs is firmer than the anterior; on section, they seem to be of a dark-reddish color; on pressure, a considerable amount of frothy fluid escapes, indicating hypostasis and edema.

Spleen.—The spleen is enlarged, the capsule does not wrinkle. The parenchyma on section, is fairly firm. Macroscopically, it shows a number of firm, deep-reddish areas, easily distinguishable over the surrounding pulp. These areas are somewhat wedge-shaped.

Kidneys.—The kidneys are pale, the cortical markings not pronounced; otherwise negative.

Liver.—The liver is very firm, reddish in color, somewhat larger than normal. The entire surface of both lobes is studded



with a number of pin-point areas. Each has a yellowish center and a red periphery. In the inferior portion of the left lobe an area is seen which is about the size of a lemon; it is a new growth. It stands out quite sharply from the surrounding tissue, is irregularly circular in outline, and the central portion of the growth is of a white color and appears fibrous in character. The periphery is yellow and raised, giving the whole growth a nodular appearance. A section of the parenchyma of the liver shows it to be studded with yellowish areas like that described above.

Intestines.—The mucous membrane of the intestines is everywhere hyperemic; solitary follicles of the ileum and the Peyer's patches are swollen, but present no ulceration.

The stomach presents nothing of interest. The mesenteric glands are greatly enlarged, some of them being somewhat soft.

Bacteriological Examination.—Cultures made from the areas of gangrene showed the presence of staphylococcus pyogenes aureus. Cultures from the spleen showed a bacillus—probably that of typhoid.

Histological Examination.—The histologic examination of the gangrenous areas on the skin showed merely a loss of tissue, with micro-organisms at the base of the ulcer.

Dr. D. N. Eisendrath offers the histologic report on the liver sections:

The microscopical examination of the liver presents two points of interest: 1, the new growth—an adenoma in the left lobe; 2, the pin-head areas with a white center and a red periphery.

1. On section through the tumor in the left lobe of the liver, one observes that there are many columns of new liver cells not arranged in the form of acini. They are separated from each other by trabeculæ of connective tissue which seem continuous with that of Glisson's capsule. The most striking features are the large size of the cells and the drops of fat which they contain.

Whether to call this tumor an adenoma, or simply a nodular hyperplasia, is still an open question. Ziegler believes that they are true adenomata, although he thinks that there is no sharp line to be drawn between these and a nodular hyperplasia on the one hand, and an adenocarcinoma on the other. Orth states that there may be a true hyperplasia of the liver parenchyma, as where a large portion of a lobe has been destroyed by an abscess, syphilis, or echinococcus. He has observed a distinct hyperplasia resembling an adenoma, in granular atrophy and in a case of thrombosis of the hepatic vein. The same occurs in cirrhosis. The condition may be quite nodular, and may be single or multiple, varying from a pea to a cherry in size. He believes that if we call such a condition an adenoma, it would be better to call it a hyperplastic, to distinguish it from the tubular variety. In this latter form, there are columns of cells, many having a distinct lumen. Both of these varieties may easily change into a carcinoma.

2. The whitish areas, on section, were seen to be scattered uniformly through both lobes. In the left there was, in addition, the adenoma just described. Microscopically, these areas are seen to be due to a necrosis of the parenchyma adjacent to the interlobular vessels. The liver cells in these are swollen, do not take the stain, and show all signs of cell death. Around each bile duct near these necrotic areas, there is a very marked, round-celled infiltration. We have a typical inflammation of the bile passages (angio-cholitis) or biliary hepatitis, as Ziegler calls it, with the resulting necrosis of liver cells. The necrosis is most typically shown in specimens stained with methylene-blue or Bismarck-brown. Such stagnation may be due, either to stagnation of bile alone, or this combined with infection. If to the latter, the micro-organisms most frequently found as causal agents, both clinically and in experimental investigations, are the typhoid bacillus, the colon bacillus, the ordinary pus coccus and the distoma hepaticum.

Dermatological Report.—Dr. Lieberthal, who saw the case in consultation, offers a dermatological report, with the following conclusions:

"From my observations, I would conclude that in the course of a febrile disease there developed over the body of this patient a number of lesions consisting of red macules, papules, umbilicated vesicles, and ulcers with a dirty-gray, moist slough, or a dry, dark, bluish-black eschar. The ulcers have steep margins, are mostly oval, and vary in size from a split pea to that of a cent. Most of these lesions are surrounded by a red border, which in itself is quite interesting. The stage of de-

velopment of the lesions seems determinable by their appearance. The first lesions are apparently macules, on which basis there developed papules and vesicles, and out of these, ulcers, at which time the borders became broader and ill-defined. The whole eruption appears to be a multiple embolic process in the vascular system of the upper corium, leading to gangrene of the type called infectious, multiple gangrene."

Special attention has recently been given to the subject of gangrene complicating typhoid fever. The early, and first contributions to this subject were made by French authors, Boerglois[1] and Bourghet.[2] Gangrene occurring during or directly after typhoid must be extremely rare. Keen[3] observed that so rare is this complication that most practitioners, and even some men of vast experience in large hospitals, have never seen a case. Holscher,[4] in 2000 fatal cases of typhoid, does not report a single case. Beltke,[5] in 1420 cases, found only four cases of gangrene, all limited to the toes. Most of the cases of gangrene which have been reported have involved an extremity or a localized area. The cases of multiple gangrene occurring as it did in our case, are rarely reported complicating typhoid.

The form of gangrene cited in this paper has been described under a variety of names. Hutchinson believed that this rare skin disease was a complication and sequel of varicella, and hence he gave it the name, varicella gangrenosa. Stokes[6] termed the condition pemphigus gangrenosus. The disease has also been described under the names dermatitis gangrenosa, and infective, multiple, cachectic gangrene. H. Radcliffe Croker,[7] who made an excellent contribution to this subject, divides the cases which came under his observation, into three classes:

Class 1. No antecedent varicella. Of these, there were five cases.

Class 2. Antecedent varicella. Of these, there were three cases. An autopsy in one case showed, among other things, minute infarcts in upper lobe of right lung; liver was fatty.

Class 3. Ulcerating eruptions after vaccination. Of this class, Croker reports but one case.

This disease does not only occur after varicella and vaccination; its occurrence has been observed after measles, or it may occur in any case where cachexia follows some severe illness. Children suffering from intestinal diseases or tuberculosis, have been observed to fall ill with the disease. Croker thinks that syphilis and rickets predispose to the condition.

In recent literature, several cases of gangrene have been reported as occurring during or after typhoid fever and some of the other acute infections. These cases occurred mostly in adults and are not identical with the case which forms the subject of this paper, either in their distribution, the form and nature of the lesions, or in the course of the disease.

Hartzell[8] contributes a paper on infectious, multiple gangrene of the skin. This case occurred in an adult woman; it was marked by the occurrence of somewhat large, multiple, gangrenous areas, and was very chronic in its course. The case did not present the evolution of papule, vesicle, pustule and gangrene which characterizes the infantile variety.

Osler[9] reports a case of multiple gangrene complicating malarial fever. He observes that these cases occur in measles, typhoid fever, typhus fever, scarlet fever and diphtheria and malaria. In his case it was observed that there was gangrene, or a gangrenous condition on the palmar surface of the four fingers of the right hand, over the dorsum of the foot, the left buttock and the occiput.

Dr. Franklin Stahl[10] contributes a report of gangrenous dermatitis complicating typhoid fever. He reports ten cases. Most of these occurred in soldiers of the Spanish-American War, who had been sent home ill from southern camps. He found that the lesions were distributed mostly over the trunk, face, arms and thighs. In two cases he made autopsies. He found of particular interest, infarction of lungs and kidneys and ecchymotic areas in the stomach.

CHOLANGITIS.

More attention has recently been paid to the study of the liver and gall-bladder in typhoid fever, than hitherto. The catarrhal form of cholangitis which occurs in our case, has received but little mention. Curschmann,[11] writing on typhoid fever, says that the microscopic examination of the liver in typhoid fever shows more or less change in every case, depending upon the severity of the infection. The liver cells first show cloudy swelling and later on, granular degeneration and

1. Bile duct. 2. Extensive round-celled inflammatory infiltration around interlobular bile vessels.

fatty change. Eventually they may break down entirely. The gall-bladder may be the seat of ulcerative or a diptheric process on its mucous surface. Secondarily, the larger bile ducts may be involved with secondary changes in the liver leading to abscess. According to the researches of Chiari[12] and Birsch-Hirschfeld,[13] the typhoid bacilli are almost constantly present in the gall-bladder in cases of typhoid fever. Talma[14] has shown in an experimental way that by injecting typhoid bacilli into the gall-bladder, that a general, though mild angiocholitis developed, preceded by a cholecystitis. A careful review of the literature shows few cases of this variety of catarrhal cholangitis as a complication of typhoid fever. Cases of suppurative cholangitis secondary to cholecystitis have been more frequently reported.

THE ADENOMA.

The occurrence of adenomata in the livers of children must be regarded as extremely rare. Musser[15] has two cases. One occurred in a boy 12 years of age; another in a female infant twenty months old. Birsch-Hirschfeld[16] in 400 sections in new-born children, observed adenomatous nodules in two cases. These nodules

stood out prominently on account of their pale color; they were sharply circumscribed and a connective tissue capsule occurred on the periphery. Microscopically, the tumors were made up of liver cells, which were frequently granular and multinuclear. The arrangement of the liver cells was not so ragged as in the normal. The significance of these adenomata permits of considerable speculation. If we consider them in the light of Cohnheim's hypothesis, which holds that retained embryonal tissue is the cause of malignant neoplasms, the significance of these tumors becomes ominous. In addition, observation teaches that these nodules take on a progressive character, they grow larger in size, and the exact moment when benignancy ends and malignancy begins would be difficult to determine. The case which was examined by Birsch-Hirschfeld is of interest in this connection. A 12-year-old boy presented a tumor of the liver which had persisted for more than a year. Previously, he had been perfectly well. The first sign of illness was indicated by loss of appetite with vomiting and diarrhea. This was followed by ascites; after this, he lost rapidly in nutrition, and death occurred as a reult of extreme marasmus. During the whole period of the illness, there was but slight icterus. A microscopic examination of the tumor showed that in certain areas the liver cells retained their normal radial type and presented a normal appearance, while in other areas the cells were arranged irregularly radial, the interstitial connective tissue was increased, and very vascular. The cells invaded this interstitial connective tissue, which indicated a degree of malignancy.

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DISCUSSION ON PAPERS OF DRS. GRIFFITH, MORSE, ROSENTHAL AND ABT.

DR. VICTOR C. VAUGHAN, Ann Arbor, Mich.—Typhoid fever in children is an interesting subject. In the first place this disease is not so common among children as among adults. I explain this fact by supposing that it is due to less exposure. The daily duties of children carry them over a less extensive range of territory than do the same duties of adults. I believe that this also explains why typhoid fever is more common among men than among women, that is, there are more chances of infection in men than in women. The same explanation probably applies to the comparative infrequency of typhoid fever among pregnant women. Some claim that woman while in this condition is immune to typhoid fever, but we know that this is not true. In the second place typhoid fever is usually less severe among children than among adults. I mean by this that the mortality is not so great. I am inclined to the belief that this is due to the more sensitive state of the intestinal tract of the child on account of which the bacilli are often largely discharged from the bowels in the early stages of the disease. I desire to state, however, that this is only a theory, and that it can not be considered an established fact. I have labored diligently to find out what the normal death-rate in typhoid fever, even in adults, is, but up to the present time I am not prepared to give any definite statements. In Hamburg, where every case of typhoid fever is reported and every death is accurately recorded, the death-rate in two great epidemics, embracing about thirteen thousand cases, has been found to be 7.5 per cent. It was practically the same in the Maidstone epidemic in England a few years ago. From hospitals in this country I have collected several thousand cases, and the death-rate from typhoid fever in these is between 8 and 9 per cent. I have collected and elsewhere published 20,000 cases of typhoid fever occurring in this country in private practice, and the death-rate among these is between 16 and 17 per cent. Officially the death-rate from typhoid fever in New York City during the years 1896 and 1897 was between 29 and 30 per cent. I mean by this that of the cases of reported typhoid fever from 29 to 30 per cent. died, while in Philadelphia the death-rate as officially recorded for the same years was between 13 and 14 per cent. The only possible explanation for this difference is that the New York physician does not recognize many cases of typhoid fever, or recognizing them, fails to report them. The death-rate from typhoid fever among children is less than it is among the adults, and possibly this may be partially due to the more rapid elimination of the toxins in the child.

I was much interested in Dr. Rosenthal's paper on the treatment of temperature in typhoid fever, and I think that it is high time that we stop experimenting with antipyretic drugs in this disease. The only safe way to reduce temperature in typhoid fever is by the cold bath. There can certainly now be no question about this, and while there may be exceptions, I think that as a general rule this is the only legitimate way of attempting to reduce the fever in this disease.

I was also much interested in Dr. Abt's paper. We can understand why cholangitis so frequently complicates typhoid fever because the former is always an infectious disease, and when it complicates typhoid fever it is due to infection with the typhoid bacillus. The gangrene noted by Dr. Abt is an exceedingly interesting point. Indeed, we are just beginning to appreciate the great variety of complications which may be due to bacteria and their toxins. Yesterday in the Section on Practice there was reported an interesting case of gangrene due to malarial poisoning. The fact that we are able to diagnose many diseases scientifically and positively by the detection and identification of the specific bacteria is giving us solid foundations upon which to build, and we are learning many things about the typhoid as well as about other bacilli. We now know that a man may have a fairly typical case of typhoid fever so far as the symptoms are concerned, without any of the so-called specific lesions in the intestines, and we also have learned that cystitis, cholangitis and terminal pneumonia may all be due to the typhoid bacillus.

DR. CLIFTON SCOTT, of Des Moines—I should like to ask a question. A very competent physician said to me not very long ago that he had convinced himself that the cold bath contributed, by the production of internal congestion, to the occurrence of internal hemorrhages; he thought he had found a more satisfactory method of reducing temperature in the injection of ice water into the colon. I should like to hear the opinion of others on this point.

DR. CHARLES DOUGLAS, of Detroit—I have listened with pleasure to the papers, particularly to the one presented by Dr. Rosenthal. It was very pleasant to find that he arrived at the point where most of us have been compelled to go. The medicinal treatment of this disease is very unsatisfactory, and impressions received from the use of remedies on a few cases are very easily dissipated. I was very sorry that the dietetic treatment of this disease was not considered this morning. However, it has been touched upon in an indirect manner. I wish, if possible, to draw out some expression as to the effects of dietetics. The reduction of temperature by baths is, of course, the only reliable way, as Dr. Vaughan has said, but it is only a temporary one, and we can not depend upon it except for a short time. I see continually the temperature reduced by baths and reproduced by errors in diet. This occurs so much in the management of typhoid fever in both children and adults that I have been sorry that more weight is not laid upon the damage we are doing by unsuitable diet.

I have found in my practice that where the diet has been kept down to the point of securing perfect digestion—and that brings us to the diarrhea which Dr. Vaughan has referred to as being due to various bacilli—the temperature has been controlled. I think we are continually ascribing to the disease many disturbances in the alimentary canal which are at work for evil. This is not a new idea with me; I gradually came to this conclusion twenty years ago. The more I can produce a comfortable condition of the bowel, the less medicine and the fewer baths are required. Medicines are, of course, quite necessary to meet emergencies.

There is a very popular idea regarding the use of small doses of calomel. I use it perhaps in one case in ten. I have never seen any bad results from it, but whenever I have found the bowel irritated from any cause, whether medicinal or dietetic, it has made the fever worse. I do not say that there must be a return of the fever with recurrences of the disease, but with perfect digestion and stools devoid of bad odor, we secure the best results. I might mention a case in point where the temperature continually ran up to 104 to 105 F. Of course, a temperature of 104 is not much to be uneasy about, but when it persists in going above this it should be checked. I was compelled to starve this patient, keeping her on a little whisky and water for nine days. During this time the temperature went steadily down, although it was just at the stage when the fever should have been at its maximum. Whenever the diet was enlarged the temperature again rose. My rule is to so feed the typhoid fever patient as to make the stools non-liquid and free from odor, as well as free from undigested food. It is this rule which I insist upon and make my nurses observe, and instruct them to note those features carefully on the clinical chart. I feed the patient anything which is digested thoroughly. It is nearly always liquid—milk, broths or white of egg. Occasionally well-boiled starch water, after boiling for three hours, may be given, and occasionally I give a little custard, but the keynote is perfect digestion. I never give more than one pint daily for every fifty pounds of body weight, and often I give much less.

DR. T. F. WOOD, Angola, Ind.—When a student I was taught, and for many years (in the early part of my practice) I thought one essential point was to feed my patients about all they could hold, from start to finish, in any case—milk of course being the principal food. After a time I began to question the propriety of this course of treatment, and by a more careful study of each case began to change my views, until now, with an added experience of many years, what not to give, and how little of it, gives me more concern than what to give, and how much of it, particularly in the first week or two of illness. Very little food is required in many cases for one, two or three weeks. The system is not in a condition to digest and assimilate food; consequently, it is a fruitful source of pain, tympanites, vomiting, eructations of gas, diarrhea, restlessness, and various other disturbing elements which our hygienic and medicinal remedies seek to avoid. First we should look well to the surroundings of our patients, make them comfortable, and keep them quite free from disturbances of all kinds, mental or physical.

Ordinarily a mercurial laxative, followed by a saline to completely empty the bowels, will be indicated; subsequently from one to three evacuations per day will be beneficial; other medicinal remedies should consist of antiseptics, antipyretics, tonics, stimulants, etc. The use of water for bathing as an antipyretic is always useful; also it is one of the best internal antipyretics and antiseptics at our command; hence, quite large quantities are not only admissible, but should be taken as part of the treatment.

I wish to say a few words on the treatment of hemorrhage as a complication, and to criticise its treatment by injections or the application of ice. I believe all such treatment is injurious and harmful. The indications in this complication are absolute quiet, and sustaining the heart's action. The indications are best met with morphia and strychnia hypodermically, the former to put the bowels entirely at rest, the latter sufficient to sustain the heart's action.

DR. J. P. BARBER, Minneapolis—Why is typhoid fever so much more severe in some patients than in others, and why is it so much more severe, as a rule, in adults than in children? In my city we have had an experience which may throw some light on this question. In 1897 we had a very severe epidemic of typhoid fever from infection of the city water supply, as proved by bacteriologic research. In the early part of the epidemic the cases were severe. The river then was covered with ice, and the water was low, and was taken from below some of the points where sewage entered. A little later in the epidemic, after the ice had left the river and the latter had been replenished by rain, there were numerous very mild cases—almost all of the walking type. In many of these it was almost impossible to make the diagnosis except by the blood and urine examinations. Some of these cases lasted only from three to five days, with slight fever, yet they showed the Widal reaction. In this stage of the epidemic about 60 per cent. were of the walking type. This raises the question as to whether this mildness of the type in the later cases was the result of dilution of the city water, thereby greatly lessening the number of bacilli received, or was due to diminution in the virulence of the bacilli.

DR. COLLINS H. JOHNSTON, Grand Rapids, Mich.—I wish to oppose the statement that the treatment of typhoid by cool baths can not be carried out in small towns in the country. Ten years ago it was begun in Grand Rapids; we were the pioneers in the State of Michigan in this field. Now, many of our physicians regularly employ this treatment, and find it easy of application. Some of my friends have carried it out in the country by filling a hogshead with water and placing a chair in this improvised tank. I recall a case in which a mother gave her child 240 baths in one month, having only the assistance of a friend from next door. Rarely does a patient refuse this treatment. The proper initiation of this method in small towns is just as easy as in a hospital.

DR. GEORGE D. HEAD, Minneapolis—There are two important phases of typhoid fever as they present themselves to the general practitioner, one is the diagnosis, and the other is the treatment. I think it is a well-established fact that typhoid cases exhibiting constipation, do best. The mortality is lowest in this class of cases as compared with those having diarrhea. I wish, therefore, to protest against the initial laxative in typhoid fever. I think the profession has made a mistake in irritating an intestinal canal already the seat of active inflammation. The sooner we do away with this initial laxative the better for our mortality statistics.

As to the diagnosis I would say that there is an aid not yet fully appreciated, namely, the use of the white-blood count. It has been generally considered that in children the leucocyte count in the diagnosis of disease is not a reliable method, but I wish to protest against this. If we take the pains to make the counts in children—the difficulties are greater—we shall find that in a large category of diseases the value of the leucocyte count is just as great as in diseases of adult life. Take, for example, a pneumonia. Pneumonia in adults is accompanied by leucocytosis. Typhoid is accompanied by no leucocytosis, and the same is true of la grippe. All septic infections have a leucocytosis. These facts apply equally well to children. The difficulties of diagnosis of typhoid fever in children are often very great, even with the Widal reaction to help us. This reaction appears in many cases too late to be of any practical value in the diagnosis, but the leucocyte count is a great aid in diagnosis from the beginning. Take, for instance, cases of meningitis simulating typhoid fever. Meningitis is followed by leucocytosis; typhoid fever is accompanied by no leucocytosis. We have in the leucocyte count an absolute means of differential diagnosis between these diseases. There are occasionally cases of appendicitis beginning like typhoid fever. Here, the white count means of differential diagnosis also would be absolute. I remember one case in my own experience, operated upon for appendicitis, but subsequently proved to be one of typhoid fever, although it had been diagnosed by two excellent surgeons as appendicitis. The leucocyte count in this case was absolutely diagnostic, and if the blood findings had been relied upon the mistake would not have occurred. I offer the leucocyte count as a very valuable diag-

nostic aid in the diagnosis and differential diagnosis of typhoid fever in children.

DR. A. C. EWING, Salt Lake City—I am never afraid when the temperature gets too high, but I watch the pulse. I never give antipyretics to reduce the fever, but administer an abundance of water externally and a superabundance internally. Beyond this I trust to the *vis medicatrix naturæ*.

DR. ROSENTHAL, in reply—I have used water very frequently, and also saline infusions at intervals of two or three hours where there is much hyperpyrexia. I have seen cases of peritonitis complicating typhoid do excellently well on almost no food. I would only use calomel in the first eight or ten days, and I would give it in very small doses frequently repeated. I am in the habit of combining it with salol, probably because of my belief that its antiseptic action will be of value. If, after two weeks, constipation occurs, showing that the case is on the road to recovery, the administration of calomel is withheld, for it would certainly then do harm. The treatment of intestinal hemorrhage is certainly best carried out by securing rest, and by morphin if necessary. If these cases could be early and accurately diagnosed I should be in favor of having a good surgeon operate, but it must be remembered that we hear of successes but not of failures. It seems to me that appendicitis is apt to complicate typhoid fever, and that cases of the latter are apt to develop subsequent to a catarrhal appendicitis. In some of these cases operated upon, as long as the wound was kept open the temperature would be low, but would rise at once upon checking the discharge. Many of these cases may last for months. There seems to be a prevalent opinion that the use of the Brand bath treatment is simply for reducing the temperature. I said, on the contrary, that the treatment must be individualized. The idea of the Brand treatment is to get rid of the toxins. If the urine of the patient be examined before and after the bath it will be found that the toxicity of the urine is increased sevenfold after the bath, showing that the bath favors the elimination of these toxins. Where it is inconvenient to use the bath the child may be placed in a sheet, a gutter made, and the child kept wet constantly day and night.

TWO CASES OF SUPPURATION OF THE PAROTID GLAND WITH PUS IN THE EXTERNAL AUDITORY CANAL.

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PHILADELPHIA.

The two cases which I desire to report possess interest from the fact that in each case there was considerable difficulty in eliminating suppurative otitis media as the cause of pus in the auditory canal. Both cases were children, and the presence of the pus may be accounted for by infiltration through the incisuræ Santorini. Of course, this has often been known to occur, but I think the cause is frequently overlooked by the general practitioner, or those who have not made a special study of the subject, the pus being regarded as coming from the middle ear.

CASE 1.—The patient was a boy, white, aged 9 months. The mother, who brought the boy to the dispensary of the Pennsylvania Hospital, said that the child's father had syphilis. Examination showed a large gummatous mass involving the parotid gland and tissues surrounding it and in front of the auricle. The external auditory meatus was quite filled with pus; upon removal, however, the drum was seen to be perfectly healthy. The anterior wall of the external auditory canal was boggy and pus exuded from its surface. An incision was made over the abscess in front of the auricle, and under specific treatment the child improved rapidly.

CASE 2.—I saw this case in consultation with Dr. Henry M. Fisher, of Philadelphia, to whom I desire to express my thanks for his kindness in allowing me to report it, and in furnishing me with his notes on the case. The child was a little Italian boy, aged 2 years, who, on March 5, 1901, developed measles. On March 7, symptoms of marked tracheal obstruction appeared, with evidences of bronchial pneumonia. Four days later the pneumonia had involved both lungs and a condition of induration of the right parotid and left submaxillary glands was discovered. A few days later there was discharge of pus from the right ear, and the abscess of the left submaxillary gland pointed. On the 17th, I saw the child, and found the right parotid gland very much swollen, with no area of softness discernible. There was profuse purulent discharge from the right ear. On cleansing the pus from the canal a large portion of the drum could be seen, and was perfectly healthy. There was oozing of pus from the anterior wall of the external auditory meatus, reappearing almost as soon as the surface of the canal was cleansed. The child was almost moribund, its temperature very much elevated, and it died some hours afterward. Before death there was a discharge of pus into the mouth.

TROPICAL DISEASES.*

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I have great pleasure in being able to record for the last year a general and perhaps unparalleled advance in our knowledge regarding tropical diseases.

YELLOW FEVER.

The discovery of at least one mode of infection in yellow fever—a discovery of the highest importance to mankind—emanates from America. For some time past several of our American colleagues, stimulated by recent observations in connection with malaria, have sought an experimental verification of the hypothesis of Finlay and others, that yellow fever also is communicated by the bite of gnats. Insects fed on patients were subsequently induced to bite healthy persons who volunteered for the experiment. The results were negative until the gnats were kept for an interval of twelve or more days between the two operations. Success was now immediate. Drs. Reed, Carroll and Agramonte record in their last report that out of seven non-immune persons subjected by them to the bites of infected mosquitoes, six yielded undeniably positive reactions. At the same time, seven non-immunes whom they endeavored to infect by means of the fomites of patients under peculiarly favorable circumstances, remained in every case free from the disease.

The experiments were conducted under the most stringent scientific conditions. Although the mosquito theory of yellow fever does not possess the parasitological basis of the mosquito theory of malaria, yet the differential observations of Reed, Carroll and Agramonte are of a nature to leave no doubt concerning the soundness of their conclusions.

Some of the tests have involved great heroism on the part of those who were subjected to them. Since the death of Dr. Jesse W. Lazear we have to deplore that of Dr. Walter Myers, one of our most promising young pathologists, who lost his life from yellow fever when on a deputation from Liverpool to study that disease.

If the pathogenic organism of yellow fever, hitherto undiscovered, prove to be a vegetable organism, the fact will suggest that transference by suctorial insects and arachnids, with which we are already so familiar in the case of animal para-

* An Address delivered at the opening of the Section of Tropical Diseases, at the Annual Meeting of the British Medical Association, at Cheltenham, July 31, 1901, from advance proof furnished by the Editor of the British Medical Journal.

sites, may be no less common in the case of vegetable parasites. *A priori* there is nothing improbable in the view that suctorial insects may become generally infected by blood containing schizomycetes, which may next find their way by route of the insects' salivary glands or otherwise into a fresh host. There are certainly some epidemiological facts which suggest the possibility of infection by gnats in undulant fever and perhaps leprosy, and by other vermin, in relapsing fever, typhus, and perhaps several skin diseases.

ANKYLOSTOMA DUODENALE.

Another important advance is contained in the confirmation of Giles's life-history of the ankylostoma duodenale by Annett —details of which will shortly be published. These observations throw a vivid light on the route of infection adopted by these dangerous and widespread parasites.

UNDULANT FEVER.

Owing to observations made by Wright on the serum reaction in undulant (Malta) fever, this disease has been shown to exist in India, Hong Kong, the United States, the West Indies, and Brazil—a most important fact in connection with the great subject of tropical fevers.

MALARIA.

The recent advance in our knowledge of malaria has been well maintained by numerous observers. The practical side of the mosquito theory, which at once became predominant after the determination of the life-history of the parasites, has been energetically treated by Koch and his assistants, who have successfully dealt with malaria on a large scale by means of quinin. Similar work has been performed with success in the United States, and, according to reports, in Italy. In British possessions isolated efforts to deal with malaria according to the new principles have been made by Sir William MacGregor and Strachan at Lagos, and by Thomson and Young at Hong Kong; but the country generally has not adopted an intelligent attitude in this connection.

On the other hand, British workers have closely studied details of the malaria question in many parts of the world. We must refer especially to the good work done in Central and West Africa by the Malaria Commission of the Royal Society, and to an admirable sanitary survey of Nigeria made by the Liverpool expedition during the last year. Direct cultivations of the parasites have been reported by Daniels, Ziemann, van der Scheer and van Berkelom, and Woldert in various countries—all in *Anopheles;* while Manson has completed an interesting crucial experiment for the popular demonstration of the theory by infecting healthy persons (T. Manson and Warren) in London by mosquitoes brought from Italy, and by simultaneously preserving others (Sambon and Low) in health in the Campagna in a mosquito-proof house. Nuttall and Shipley, Christophers and Dutton have closely examined the anatomy of gnats. Nuttall, Cobbett, and Strangeways-Pigg have made interesting researches on *Anopheles* in England, in which, by the way, cultivation experiments have hitherto failed. Gosio, Giles, Reinhold Ruge, Fearnside, Neveu-Lemaire, and others have done useful work on the subject in many directions. It remains, however, a matter for regret that stronger efforts have not been made to determine the reason why individual gnats of an amenable species so often resist infection. Until this difficulty is cleared away negative experiments with *Culex* cannot be entirely convincing.

Since the last annual meeting of the Association the mosquito theory of malaria has received the highest scientific acceptance in the address of the President of the Royal Society, Lord Lister.

FILARIASIS.

In regard to filariasis the discovery of Low and James has been confirmed and amplified by several observers. Manson has suggested the possibility of reducing lymphatic varix by leading a lymphatic duct below the stricture into a neighboring vein.

PLAGUE.

The prompt suppression of plague in Glasgow has further demonstrated the value of energetic sanitary measures in this disease; and the large demand for plague vaccine gives encouraging evidence in favor of Haffkine's prophylaxis.

BERI-BERI.

The close clinical similarity of beri-beri and chronic arsenical poisoning seems to suggest that many cases attributed to the former disease may possibly be in reality due to arsenic.

WORK FOR THE FUTURE.

It seems to me that further researches are at the present moment most urgently required in connection, 1, with tropical fevers; 2, with the flora and fauna of the intestine in tropical bowel complaints; and 3, with the question whether European children in the tropics suffer as frequently from malaria as do the children of natives. The practical necessity of taking measures against the uncontrolled propagation of gnats in tropical cities is one which, in view of recent discoveries, can no longer be set aside by sanitary authorities without dereliction of duty.

The profession owes its sincere thanks to all those gentlemen who have done so much during the past year—often without remuneration and at considerable personal risk—for the cause of tropical medical science. It also owes its thanks to those British merchants who have generously subscribed large sums of money for the prosecution of many of the researches to which I have referred.

Reorganization of the American Medical Profession.

. . . . . The plan of the Committee for the federation and interdependence of the National, State and County societies is an excellent one. Membership in the county society becomes a prerequisite to membership in the other organizations. The county organization thus becomes an unit of the state association, and the state of the National body. Each is thereby strengthened and made more powerful, each becomes more cohesive and each develops into an effective, offensive or defensive organization which will command respect and consideration because it represents an organized power which is able to reward or punish, both its friends and its enemies. The medical profession in America is large in numbers but it lacks stability and cohesiveness when called upon to protect its interests against agencies that are detrimental to its welfare. In this it, in no small manner, is similar to that Asiatic nation, the so-called celestial kingdom, which is great in numbers but whose slight stability and cohesive power renders it an easy victim to its enemies.

Reorganization of the medical profession in America is a necessity. This must begin in the county society which is to form the basic part upon which the entire fabric of an organized profession must rest. Upon these is to be built the state organization, and from the state societies must come the chosen few who are to wear the senatorial togas in the parliamentary body of the American Medical Association, the body that is to formulate the policy of the profession on matters of vital interests, the body that is to aid destiny to shape our ends to a satisfactory conclusion, rough hewn though they may be, the recommended House of Delegates of the American Medical Association.

As recommended by the Committee, regional tri-state and district societies, save in a few instances, should be abolished. These, as at present constituted, serve but a slight purpose for good, while on the other hand they weaken and detract from the county and state societies that as federated units are essential to the integrity of the National Association. They are parasitic growths on the medical body politic which sap the life strength of the National organization, and as such should be lopped off and be allowed to perish. Let their friends and promotors devote their energies to the upbuilding of their respective state and county societies where their efforts will add to the strength of the profession as a body, and where they will hasten and not hinder the consummation of professional unity.

In the trinity of National, state and county organizations, a federated union, in which each is developed to its greatest possibilities, will the profession find a power, that, like faith, can move mountains.—*Courier of Medicine*, July.

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EXPERIMENTAL TUBERCULOSIS OF ADRENALS.

A vast amount of work, clinical, anatomical and experimental, has been done in order to clear away some of the mystery surrounding the adrenals, their physiology normal and pathological. The most important affection associated with the adrenals is Addison's disease. Numerous theories have been advanced in regard to this condition, but up to the present time no single theory has proved generally satisfactory. The recent brilliant discoveries in the chemistry of these glands have culminated in the isolation of certain substances with powerful actions, especially in raising the blood pressure, but their exact rôle in normal physiologic processes is not yet fully understood. It has been thought that the symptoms of Addison's disease in some way are explainable as dependent upon the suspension or perversion of the internal secretion of the adrenals owing to the fact that they are largely destroyed or replaced especially by tuberculous products in this disease. Experimental removal of the adrenals, however, has not given rise to any symptom complex at all comparable with that of the human disease. The conditions of the experiments are, of course, widely different from those of the spontaneous disease, in which the glands are slowly destroyed or replaced by pathologic products. In the case of tuberculosis of the adrenals the reactions between the bacilli and the cells of the glands might give rise to peculiar substances of great importance in the etiology of Addison's disease.

With these and other considerations in mind, de Vecchi undertook to study the general effects and local lesions of experimental tuberculosis of the adrenals, hoping in this way to reproduce a little more accurately than heretofore the actual conditions seen in Addison's disease. For this purpose he inserted tubercle bacilli into the adrenals of animals (rabbits), which were then carefully observed and eventually carefully examined after death, spontaneous or otherwise, and at varying intervals after the injections. There resulted a fibrocaseous process which beginning in the center of the adrenals ultimately led to their destruction. Constant changes were not observed in the sympathetic structures near by, but grave degenerative lesions were found in the nerve cells of the central nervous system, being most intense in the dorsal part of the cord. Degenerative changes were also present in the heart, the liver, and the kidneys. A distinct oligocythemia developed, which is ascribed to the presence of some toxic agent with hemolytic powers, because of the deposition in the liver and the spleen, as well as the bone marrow of hematogenous pigment. As indicated, spontaneous death occurred in some of the animals experimented on, and there seems to be little reason to doubt the author's conclusion that death under these circumstances is due to a progressive intoxication; we miss, however, definite statements to the effect that infections of a mixed character were excluded by careful bacteriologic examination. General tuberculosis was not observed. The symptoms during life seemed to be of a nervous type, as far as could be determined, namely, convulsions, paresis, feeble respiration and heart's action. Emaciation developed to a fairly well-marked degree. The pigmentation and other cutaneous changes of Addison's disease were not reproduced in the animals in this series of experiments.

Still the author believes, and correctly it seems, that he has succeeded better than others in the experimental reproduction of the lesions and symptoms of Addison's disease. The effects of gradual "adrenal insufficiency" and the tuberculous intoxication combined have not been emphasized sufficiently in the various theories of the etiology of Addison's disease. Much work remains to be done, of course, and the experiments of de Vecchi are especially valuable because they suggest new viewpoints for the discussion of the interesting problems connected with Addison's disease.

CONCERNING THE PRESENCE OF OXALIC ACID IN THE ORGANISM.

It seems not impossible that the presence of oxalic acid in the body in undue amounts may be attended with a more or less well-defined group of manifestations, but the subject is one that is surrounded with a good deal of uncertainty. As the result of an experimental and clinical investigation undertaken a few years ago, Dr. Helen Baldwin[1] arrived at the opinion that as varying amounts of calcium oxalate may be held in solution in the urine, conclusions based upon the presence or number of calcium-oxalate crystals found therein are of no real value as an indication of the quantity of oxalic acid present. Unless the utmost care is exercised, the results obtained by quantitative estimations of oxalic acid are subject to large percentages of error. An ordinary mixed diet regularly contains traces of oxalic acid or its salts. A portion of the oxalic acid ingested with the food may be absorbed and reappear unchanged in the urine. The normal daily excretion of oxalic acid in the urine fluctuates with the amount taken in the food and varies from a few milligrams to two or three centigrams, being usually below ten milligrams. In health no oxalic acid or only a trace is formed in the body, but that present in the

1. Journal of Experimental Medicine, vol. v, No. 1, p. 27.

urine has been ingested with the food. In certain clinical disturbances sometimes associated with an absence of free hydrochloric acid from the gastric juice, oxalic acid is formed in the organism as a result of fermentative activity in the alimentary canal. The prolonged feeding of dogs with excessive quantities of glucose, together with meat, leads eventually to a state of oxaluria. This experimental oxaluria is associated with a mucous gastritis and with an absence of free hydrochloric acid from the gastric contents.

More recently, Dr. Cipollina[2], of Genoa, undertook, in the chemical laboratory of the Pathological Institute at Berlin, a study for the purpose of determining the share taken by the body and the food respectively in contributing to the presence of oxalic acid in the urine, the organs in which the acid is formed and if possible the intermediate substances from which it results. As the outcome of this investigation, it was shown that the viscera of human beings and animals contain small amounts of oxalic acid, the spleen in the largest amount—apart from the thymus gland, which in the case of adults need not be taken into consideration. The amount of oxalic acid contained in the viscera is small, but on the whole it is about ten times as large as the maximum amount eliminated with the urine in twenty-four hours. The spleen, possibly also the liver and the muscles, is capable of forming oxalic acid by oxidation from uric acid. The amount of oxalic acid in some articles of food is so large that it must be taken into consideration in the nutrition of individuals who suffer from disturbances due to oxalic acid.

2. Berliner Klin. Wochenschrift, 1901, No. 20, p. 544.

THE CONVEYANCE OF MOSQUITOES.

Since the transmission of malaria by mosquitoes is an established fact, and that of yellow fever hardly less so, the question of the transmission of the mosquitoes themselves rises into importance. It has been said—and this has been used as an evidence of the possibility of exterminating them—that they seldom fly far from home, but are essentially local in their habits. This may be true to a certain extent, and yet the locality may be more or less extensive; there may also be striking exceptions to the rule. The mosquito may be a home-loving body, but the *Wander-lust* may at times overcome her—it is the female mosquito that bites—or she may be transported against her will. There are localities where, according to the popular belief, mosquitoes were unknown until some railroad or canal was opened to traffic to the place, and then they became the usual nuisance. A personal experience of the writer is in point; when traveling on a western railroad through a dry sage bush region, the train stopped for a few minutes at a station alongside a sluggish alkaline stream. The cars were immediately invaded through doors and windows by swarms of the pestilent insects and it was only after many miles of further travel that we finally got rid of them.

It is more than merely possible that in this the transmission of malaria and yellow fever to points before exempt can sometimes be thus accounted for. They can also be transported otherwise; the recently reported case of the ship *America,* which became infested ten miles from land in the Gulf of Mexico, is an instance, and the other instance reported in the same issue of the Public Health Reports of the United States Marine-Hospital Service illustrates their possible persistence when once aboard a vessel. The crew of the Spanish bark *Maria Blanquer* were obliged to abandon the forecastle and sleep under close cover on account of the mosquitoes which appeared on board of the vessel when twenty-two days out of Rio de Janeiro. Such facts are not new, Howard in his recent book mentions their possibility; but these are striking instances.

It may be that health and quarantine officers will here have a new special problem to deal with and mosquitoes as well as rats have to be looked after in vessels coming from infected ports. Railroad trains, espeally freight trains with cars loaded at infested points, appear to be reasonably open to suspicion and to suggest special precautions. The hopefulness of eradicating the mosquito by local measures is also affected by such facts.

THE STUDY OF THE HISTORY OF MEDICINE.

The study of old medical writings is an attractive one from many points of view. It tends, for instance, to give one the proper perspective for a broad estimation of the present state of development of the medical sciences. The work done by our medical ancestors naturally ought to interest us as physicians quite so much as the work of our political and religious forefathers interests us as citizens. The history of medicine is a *terra incognita,* however, for the great majority of medical men and students. No place seems to have been set aside in the medical curriculum of the present time for even a cursory review of the historical development of medicine; its most important epochs and even the names of its early founders and of its heroes are unknown to the great mass of medical students. The establishment of elective courses in the history of medicine is certainly indicated in order to create some interest in this important study. The work of certain local societies and of individuals has already done much to revive among us a keener interest in past events and in the work and personality of the fathers. Packard's interesting work on the history of American medicine has been received with marked favor, and its reading certainly helps one to a more correct and broader understanding of medical matters in our country. The local medical history of our cities and of various districts of the country certainly offers attractive fields for investi-

gation to the cultured physician interested in historical matters.

In a recent address, Frederick P. Henry,[1] of Philadelphia, calls our attention to the works of the Portuguese physician, Valescus de Tarenta, who lived in the latter part of the 14th and the beginning of the 15th century and whose "Tractatus de Epidemia et Peste" is one of the first medical books ever printed. Henry gives a bibliographic description of the copies of the "Tractatus," and of the only other known work of Valescus de Tarenta, the "Philonium," in the library of the College of Physicians of Philadelphia. But little is known concerning the life of their author. He was physician-in-chief to Charles VI, King of France, and professor in the medical faculty of the University of Montpellier, where his portrait is still preserved in the *salle de conseil*. The name "Philonium" which he gave one of his works seems to be the name of a medicament, one of whose properties was to invite sleep. In this book are discussed a number of obscure questions, as for instance, the reason why the cleaners of cesspools are able to withstand foul odors. The "Tractatus de Epidemia et Peste" consists of twelve short chapters, in which the etiology, the treatment, etc., of epidemic disease are discussed. Henry notes that one of the recommendations in this work is eminently favorable to the diffusion of contagious diseases, namely this, that the patient should frequently change not only his bed, but also his room and his house. Among the prescriptions recommended is one that calls for gold filings, sapphires, emeralds and coral—a form of treatment certainly beyond the reach of the poor patients. For the bubo of pest there is recommended as a local application the fundament of a live cock, which was to be continued until the cock dies!

ALCOHOLIC NEURITIS.

Since the recent extensive epidemic of arsenical neuritis due to the use of contaminated beer the question has been raised whether so-called alcoholic neuritis is really of alcoholic and not of arsenical origin. It has been contended that this form of neuritis occurs only in beer-drinkers and not in spirit-drinkers, and there is evidence to show that it is the impurities present rather than the alcohol that is responsible for the intoxication resulting from the use of spirit. For the purpose of reaching a definite opinion in the matter, Dr. E. F. Buzzard[2] undertook a careful analysis of 120 cases of alcoholic neuritis observed during a period of twelve years at the National Hospital for the Paralyzed and Epileptic in London. Of this number spirit alone and in excess was taken in 29; beer alone and in excess in 1; spirit especially in 11; beer especially in 1; and beer and spirit in excess in 30; hence, the predominant influence in the development of the neuritis must be accorded to spirit rather than beer. In 57 of the cases no special reference is made to the condition of the skin or its appendages; in 23 no cutaneous changes were found; while in 40 various vasomotor, trophic or pigmentary changes were described. The last named, however, were in general characteristic of neuritis, while changes due to arsenical poisoning were conspicuously wanting. Further, in 24 cases arsenic was employed in treatment, alcohol, of course, being withheld, and the results in these, far from being worse, were at least as good as in those treated by other means, if not better. An additional interesting fact resides in the circumstance that of a large number of cases of all kinds treated with arsenic, at times for long periods, neuritis developed in but two, although a considerable number presented other symptoms of arsenical poisoning, as exhibited in pigmentation of the skin.

1. Maryland Medical Journal, June, 1901.
2. Lancet, June 8, 1901, p. 1593.

THE PATHOLOGY OF SUNSTROKE.

The severe functional disturbances of sunstroke are not adequately accounted for by the morbid anatomical changes so far described in this condition. Edema, hemorrhages of various kinds and extent, and venous hyperemia are the principal gross findings. Most of the histologic examinations have been made by means of the older technical methods. Obviously there is room here for experimental work, and Scagliosi,[1] of Palermo, exposed guinea-pigs to the immediate action of the sun's rays during the months of August and September, when the highest temperature varied from 29.6 C. to 31.3 C. Under these circumstances the animals, as a rule, succumb in from 1 to 3 or 4 hours after great rise in temperature, hurried respiration, rapid heart's action and convulsions. Animals in the state of prostration when brought into a cool atmosphere revive temporarily but die later with continued fall of the bodily temperature. Careful postmortems were now made and the principal internal organs carefully examined according to the most improved modern methods. Profound changes in the central nervous system were observed, consisting of vacuolization of the nuclei of the ganglion cells and general chromatolysis. Severe degenerative lesions also developed in the heart, the lungs, the kidneys, and the liver. The blood shows a transitory increase in concentration and in corpuscles; occasionally a distinct leucocytosis was present. Scagliosi refers the degenerative changes to the action of toxic substances in the blood, and the fall in the temperature of some of the animals to disturbances in the radiation of heat; it is also ascribed to the changes in the blood. The changes in the physical and chemical constitution of the blood plasma he attributes to direct overheating of the blood. This in turn causes physico-chemical changes in the tissues, disturbing the normal regulation of heat, so that the animals which survive for a time show marked decrease in temperature. The pathology of sunstroke is exceedingly complex, and undoubtedly its solution can not be accomplished by morphologic methods because they do not make clear the exact nature of the physico-chemical alterations which there is good reason to believe are produced in the blood

1. Virchow's Archiv, 1901, clxv, 15-41.

and the tissues. The most that morphology can do is to point out the direction that investigation should take.

THE THERAPEUTIC EMPLOYMENT OF CACODYLIC ACID.

Of the therapeutic utility of arsenic there is no need to speak, but there has recently been put forth by French clinicians an arsenical preparation—namely, cacodylic acid—for which claims have been made with regard to its innocuousness and its greater efficiency. The first of these claims has not been sustained, as toxic effects have been noted as a result of the employment of cacodylic preparations, while if their usefulness is by any means as great as they are given credit for, we have, indeed, come into possession of a most valuable therapeutic agent. Thus, according to Armand Gautier,[1] cacodylic acid and the cacodylates render remarkable service in the most varied affections, and particularly tuberculous affections—pulmonary, osseous, visceral—diabetes, neurasthenia with general wasting and impairment of function, visual disturbances, malarial intoxication, influenza, profound anemia, asthma, chorea, protracted convalescence, wounds with loss of tissue, fractures, the effects of repeated pregnancy, incoercible vomiting, myxedema, diseases of the skin, etc. They have yielded variable or doubtful results in cases of paralysis agitans, the degenerations attending mental disorders and cases of carcinoma. They may be employed for a number of years consecutively without causing derangement of nutrition, congestion of the liver or kidneys, intestinal tract, nervous centers and the skin. They act by stimulating the reproduction of cells, increasing the number of red blood-corpuscles, rejuvenating the tissues and conferring upon the economy an extraordinary degree of resistance to morbid influences. While we are scarcely so sanguine as to hope for a realization of all that is promised in the foregoing, we feel that the remedy is deserving of judicial trial, and that its continued use should be decided for or against on its merits. Although the current price of the drug—about five dollars an ounce—seems extremely high, the cost of the individual dose or of sufficient for a course of treatment is really not so, as an ordinary dose is about one-sixth grain.

ORGANIZATION OF THE ARMY MEDICAL DEPARTMENT IN ACTIVE HOSTILITIES.

Every war of the last century has been prolific in criticism of the work of the medical department. The strictures have not been limited to any one campaign nor to any nation. The defects have been conspicuous in the British-Boer hostilities in South Africa no less than in the Spanish-American operations in the West Indies and the South Sea Islands. The service of the sick to-day is subjected to criticisms of the press so similar to those inflicted upon the military medical situation forty years ago that the editorial comments of the two periods may be interchanged without detection. The conditions which led to the enforced resignation of a cabinet minister in 1899 have recurred wherever belligerent forces have taken the field, until at the present time the question of the suitable care of the sick and wounded assumes an importance almost equal to the *casus belli* itself. To the solution of the problem of promptly relieving the suffering and efficiently aiding the injured, the brightest medico-military minds have devoted their attention for a long time. Great advances have been made; and, notwithstanding the hostile attitude of deluded and more or less malicious critics, the medical service of to-day is far superior to that of any previous period. But the medical department has always been so hampered in its efforts to develop the highest efficiency, that results satisfactory to itself, as well as to its critics, have never been attained. The Proceedings of the Association of Military Surgeons of the United States, during its decade of existence, reveal numerous attempts to solve this problem, but the successful solution appears to be as far away as ever. It was a happy thought then that led the Association of Military Surgeons of the United States to inspire work along this line by doubling its Enno Sander prize for this year, and by confining the competing essays to the subject of the most practicable organization for the medical department of the United States Army in active service.[1] It is to be hoped that the outcome of this contest may be a satisfactory termination of the inquiry which has exhausted the most accomplished military surgeons of the age. While the medical and surgical history of our recent hostilities has yet to be written, many lessons have been learned by the participants in the sanitary work of the various expeditions, and upon these lessons may be built up a system which shall satisfy the requirements of prompt and effective administration. This fact should stimulate a large number of competitors to enter the lists, and result in an unprecedented addition to our knowledge of the subject.

1. Bulletin de l'Académie de Médecine, 1901, Nos. 26 and 27.

1. THE JOURNAL A. M. A., July 20, p. 208.

Medical News.

CALIFORNIA.

Dr. George H. Aiken has been elected president of the Fresno Board of Health, and Dr. Philip N. Russell, city health officer.

Colonel Charles R. Greenleaf, assistant surgeon general, U. S. Army, has relieved Colonel William H. Forwood as chief medical officer of the Department of California.

Southern Pacific Hospital Changes.—It is announced that on the retirement of Dr. Amos Graves, chief surgeon of the Atlantic system of the Southern Pacific Railway Co., the authority of Dr. Matthew Gardner, San Francisco, is to be extended to include that territory.

The Board of Medical Examiners of the State of California held its meeting for organization, August 6. Up to the time the new medical law went into effect, 6725 applications for license had been received by the Board. About two-thirds of these were applications from outside the state.

Sue for Certificates.—Four graduates of the Pacific Coast Regular College of Medicine, to whom the State Board of Medical Examiners refused to issue certificates to practice, because the college was not in good standing, have brought suit to compel the Board to issue certificates to them.

ILLINOIS.

Dr. John A. Wheeler, Auburn, has been appointed assistant surgeon of the Fourth Infantry, I. N. G.

Dr. A. B. Middleton, Pontiac, returned from Europe, August 1, and commenced work in his new position as physician to the Reformatory.

Raise Fees.—The physicians of Bloomington and McLean County have decided to raise fees for day calls from $1.50 to $2, and for night calls from $3 to $4.

Assault on a Physician.—Because Dr. James B. Miller, South America, Saline County, had rendered a bill to Avan Lewis, a farmer of the neighborhood, he waylaid the doctor, and after attempting to shoot him beat him into insensibility with a club. Dr. Miller's condition is critical, and his assailant is held awaiting the outcome of the injuries.

Chicago.

Dr. Valborg Sogn sailed for Christiania, Norway, on the *Island,* July 18.

Dr. Eliza H. Root, whose appointment as acting dean was noticed in THE JOURNAL of May 4, has been appointed dean of the Northwestern University Woman's Medical School, Chicago.

Dr. Truman W. Brophy was elected president of the International Dental Federation, at its meeting held in Cambridge, England, August 9. The meeting next year will be held in Stockholm, Sweden.

Attending Staff Must Attend.—By order of the warden of Cook County Hospital, members of the attending staff are assigned to particular wards and are not allowed to make professional calls in other wards without first obtaining permission. The warden states that the failure of the members of the attending staff to come to the hospital or while there to attend any except certain cases in which they were interested, is the reason for this order requiring attendance.

Department of Health.—Of the total 468 deaths reported last week only 170 were of those under five years of age. This proportion is more than 30 per cent. lower than the midsummer average of infant and child mortality, and the decrease shows how promptly life and health at this age period respond to the influence of temperature. The reduction in the total mortality at all ages from that of the preceding week was confined to diseases unfavorably affected by hot weather—there being 66 fewer deaths from the acute intestinal diseases, convulsions, diseases of the nervous system and from sunstroke. The mortality rate fell from 15.6 in the previous week and 17.7 in the corresponding week of last year to 13.8 per 1000 of population.

Restriction on Internes.—On account of complaints of unnecessary and improper operating by internes at Cook County Hospital, the rule was posted August 1 that all major surgical cases must be operated on by one of the attending staff. In answer the internes, through a committee, make the following statements: "1. Whereas, it has been stated that we are but 'students,' learning our 'trade' at the expense of county patients, we emphatically deny this. Every one of us has graduated from a reputable school, has passed the state board examination, and is entitled thereby to practice medicine and surgery in this state and is selected under civil service rules, by passing successfully an examination in medicine and surgery given every year, competitive in character, and held under the most rigid and impartial rules that govern any examination whatsoever. Such qualifications are not picked up by the wayside, but gotten only by constant application, by the expenditure of a great deal of time and of money. Moreover, every interne in this hospital has had a college training before starting in the study of medicine. 2. Whereas, it has been alleged, too much and unnecessary operating has been done by internes. We point out the fact that no operation, at any time, has been had but after a complete examination by a member of the attending staff, under his direct control and supervision. There is no authentic case in the hospital in which a patient was narcotized without the presence of an attending physician or surgeon. 3. Considering the qualifications necessary to become an interne, and the fact that every senior interne has served twelve months in preparing for surgical work, it is justly evident that we should be regarded competent to participate adequately in the care of patients. Such privileges are enjoyed by internes of every other hospital in this country and abroad. 4. Whereas, * * * it appears as if there were friction between the hospital management and the internes. We assure you that there is nothing but good will between Warden Healy and the house surgeons. Signed, R. J. Friedman, M.D., J. F. Howard, M.D., A. Foerter, M.D., O. R. Goldsmith, M.D., J. F. Hultgen, M.D., Committee of Cook County Hospital Internes.

INDIANA.

Dr. J. Rilus Eastman, Indianapolis, sailed for Germany, August 3.

Dr. George W. H. Kemper, Muncie, has been reappointed a member of the Board of Pension Examining Surgeons for Delaware County.

The George W. Mears Memorial Library, Indianapolis, has received a gift of more than 4000 volumes from the founder, Dr. J. Ewing Mears, Philadelphia.

The State Board of Medical Registration and Examination passed 77 out of 90 applicants for license to practice medicine. The highest average attained on examination was 99.3 per cent.

Dr. D. D. Clark, city health officer of Decatur, who is said to have refused to quarantine in smallpox cases, and who was cited to appear before the State Board of Health to answer this charge, has resigned.

Dr. George W. Van Benschoten, South Bend, who is about to move to Providence, R. I., was tendered a banquet by the St. Joseph County Medical Society, July 25, in token of the high esteem which he is held by the local profession.

KENTUCKY.

Dr. Charles H. Voorhies, Jr., Lexington, has been reinstated as health officer of the city, vice Dr. Daniel J. Healy, resigned.

Dr. John L. Dismukes, Maysfield, has been appointed major and surgeon in the Kentucky State Guards and assigned to the Third Infantry.

Dr. William R. Heflin, Lakeland, has been commissioned as physician to the government prisoners confined in the Newport and Covington jails.

LOUISIANA.

Major J. H. C. Fisher, surgeon, U. S. Army, has reported for duty at Jackson Barracks after two years of service in the Philippines, relieving Major A. H. Appel.

Mortality of New Orleans.—This city congratulates itself on having a death-rate for a week in July equivalent to 14.18 per 1000 per annum. This is, however, for the white population only. The death-rate given is only racial, not by population, and is therefore lacking in one essential of correctness.

Lepers' Home.—The latest move in connection with the much discussed Lepers' Home question, which has been in statu quo for several weeks past, is an effort on the part of the Jefferson people to secure possession of the Elkhorn property by purchase from the state. This action followed an ultimatum by the governor.

Free from Mosquitoes.—It is said the only place in New Orleans free from mosquitoes is the United States barracks, Camp Jackson. This is in the lower end of the city, in one of the worst mosquito districts of Louisiana. Captain John T. Martin, who is in command, began the oil treatment long before the war department issued the order giving officers authority to use crude petroleum in the effort to rid the various posts of mosquitoes.

MASSACHUSETTS.

Dr. Alexis L. Draper, Dorchester, has been appointed post-office physician of Boston.

Lieutenant George C. Littlefield, assistant surgeon of the Second Corps Cadets, Salem, has resigned.

Dr. Henry Colt, Pittsfield, has been appointed medical examiner in the Second Berkshire District, vice Dr. Frank K. Paddock, deceased. Dr. Colt is succeeded as assistant examiner by Dr. Lawrence C. Swift.

The New Harvard Medical School.—The new buildings erected by the munificence of John Pierpont Morgan in memory of his father, make up three of the seven buildings required for the new school. They are to be the administration building; anatomy, histology and embryology building and physiology and physiological chemistry building, and will cost about one million dollars.

MICHIGAN.

Dr. Sheridan E. Gardiner, Mt. Pleasant, has been appointed pension examining surgeon.

Communicable Disease in Michigan.—Including reports by regular observers and others, cerebrospinal meningitis was

reported during July, in 12 places; whooping cough in 26 places; diphtheria in 53 places; measles in 58 places; typhoid fever in 92 places; scarlet fever in 108 places; smallpox in 114 places, and consumption in 195 places.

Dr. **Louis Barth,** Grand Rapids, has offered the city property on South Lafayette street for hospital purposes. It is arranged that the city shall accept the property, reserving to itself the privilege of disposing of it for a cash consideration. The eventual result of this new arrangement will be the establishment of the "Louis Barth Hospital" for communicable diseases in the southeast section of the city, remote from the residence district.

Health in Michigan in July.—In the Monthly Bulletin of Vital Statistics, the report of the secretary of the State Board of Health, based on the sickness statistics, shows that in July, as compared with the average in the ten years preceding, scarlet fever, smallpox and diphtheria were more prevalent, and consumption, intermittent fever, remittent fever, inflammation of bowels, erysipelas, whooping cough and cerebro-spinal meningitis were less prevalent.

Smallpox in the Michigan Asylum for the Insane.—Referring to the news item in THE JOURNAL of August 10, entitled "New Disease in Michigan," the medical superintendent of the asylum advises us that in the beginning the best local consultants agreed in calling this disease chicken-pox, but that later the State Board of Health called it smallpox, and such it has been called since and such in his judgment it is. At no time has he believed that there was anything new in the line of eruptive disease in the asylum. In a population of 1725 there have been 53 cases of which 46 have recovered and 7 are convalescent.

MARYLAND.

The health commissioner of Baltimore is waging war against all artificially colored sausage. The law gives him power to confiscate all food stuffs thus prepared.

Dr. **Cephas L. Wingerd** has instituted suit in Hagerstown against the Western Maryland Railroad Company for $5000 damages for injuries sustained last February, when he was thrown from his buggy by a train.

Baltimore Physicians' Vacations.—Dr. J. A. Claverie has gone to Donaldsonville, La.; Dr. E. C. Gibbs, to Rehoboth, Del.; Dr. Douglas Malcolm to the New England Coast; Dr. C. S. Woodruff to Lake Beaufort, Quebec; Dr. J. M. Hundley to Charmion, Pa.; Dr. A. B. Gaither to Atlantic City; Dr. H. H. Goodman to Asbury Park, N. J., and Drs. Hiram Woods, Geo. E. Houck and C. A. Davis to Boston.

MINNESOTA.

Diphtheria is reported to be increasing steadily in Minneapolis, where thirty new cases were reported during the first six days of August, with seven deaths.

Freak Medical College.—The Wisconsin physician who thrust notoriety on himself by his peculiarly filthy methods of showing his disbelief in the contagiousness of smallpox, now announces his intention of inflicting on St. Paul a school of anti-contagious medicine, where his peculiar views will be put forth.

Ohage Island Baths.—On August 1, Dr. Justus Ohage, health commissioner of St. Paul, formally transferred Harriet Island, with its park and baths, to the city of St. Paul. The island will henceforth be known as Ohage Island in recognition of the debt the people owe to Dr. Ohage for his labors in the direction of the cleanliness and health of the city.

Smallpox.—Since January 1, there have been 299 cases of smallpox in Minneapolis, with one death. Only one patient now remains in the isolation hospital. Smallpox in the state has decreased nearly one-third since the report of July 15. There were only 239 new cases reported in the last two weeks of July; in the first two weeks, 380 cases were reported. The greatest number of cases is in Stearns County.

Hennepin County Board of Health has been organized with County Physician Kistler as its medical member. Arrangements will be made with Minneapolis whereby smallpox patients may be cared for at the quarantine hospital at St. Louis Park and patients with other diseases at the City Hospital at $1 per day. This will obviate the necessity of keeping guards over quarantined houses and eliminate other expenses in caring for patients in their homes. Dr. Kistler will care for county cases for the rest of the year for $150.

NEW JERSEY.

Dr. **Lewis C. Williams** began his service as house-physician at St. Francis' Hospital, Trenton, August 1.

Joseph D. Kelley, Keyport, arraigned at Freehold, July 25, for practicing medicine without a state license, plead guilty, and on August 1 was fined $150.

A new ambulance has been donated to St. Francis' Hospital, Jersey City, by Joseph E. Bernstein, and will be maintained by a society of men, each of whom pays an annual subscription of five dollars.

Five Monmouth Physicians Arrested.—The State Medical Board, through Dr. John W. Bennett, Long Branch, caused the arrest of five physicians in that place, July 31, charged with practicing medicine without having first filed a certificate of license with the county clerk as required by law. Four of the five waived examination.

Notification of Tuberculosis.—Dr. John D. McGill, Jersey City, president of the Board of Health and president of the State Medical Society, on July 30, requested all physicians in the city to report cases of tuberculosis as they have heretofore reported smallpox, diphtheria or scarlet fever. Printed postal cards are being prepared and will be furnished to each physician. At present there is no ordinance classifying tuberculosis as a contagious disease, and no compulsion will be exerted to induce physicians to comply with the request of the Board of Health.

NEW YORK.

Convention of Health Officers.—The State Department of Health is arranging for a convention of health officers and registrars of vital statistics to be held in Albany, October 24 and 25. It is expected 2000 officials will attend. Addresses will be made by prominent authorities on sanitation, public health, etc.

Applicants for Medical Interneships.—The State Board of Regents filed with the state civil service commission, August 6, a list of thirty-one medical students who have successfully passed the examinations to practice medicine in this state and who in addition have filed applications for the position of medical interne in the state hospitals. Of this number, twenty-eight are graduates of the regular school.

Craig Colony for Epileptics.—The seventh annual report of the managers and the superintendent of the Craig Colony for Epileptics has been issued. It shows that there have been 854 admissions since 1896, of which 612 remain. The objects of the colony are to secure the humane curative, scientific and economical treatment and care of epileptics. **From 75 to 80** per cent. of patients improve under the colony system and from 7 to 10 per cent. recover. The remainder go down into epileptic dementia.

Buffalo.

The German Hospital dispensary staff, at a recent meeting, passed resolutions expressing the great loss at the untimely death of Dr. Frank Bingham, an active member of the staff.

The International Council of Nurses will be held at Buffalo, September 16 to 20. A large attendance of nurses from all parts of the United States and Canada is expected. The societies to be represented are as follows: The Associated Alumnæ of Training Schools for Nurses of the United States, the American Society of Superintendents of Training Schools and the International Council of Nurses.

New York City.

Dr. Andrew H. Fridenberg, who was arrested July 31 on the charge of illegal practice of medicine at Long Branch, N. J., was acquitted August 3, and immediately instituted a suit for $10,000 damages against the physician who caused his arrest.

OHIO.

The estate of the late Dr. Milton T. Carey, Cincinnati, is valued at $85,000.

Dr. P. Maxwell Foshay, Cleveland, was elected president of the newly-organized board of trustees of the State Hospital for Epileptics, at its meeting, August 5.

Dr. William K. Coleman, West Union, was elected superintendent of the State Hospital for Epileptics, Gallipolis, August 5, vice Dr. H. C. Rutter, resigned.

Dr. Albert P. Ohlemacher, Gallipolis, was reinstated in his position as pathologist of the State Hospital for Epileptics, August 5. This was the first official act of Superintendent Coleman.

Dr. Louis L. Lyman, Springfield, has been appointed chief surgeon of the Southern Division of the Detroit Southern

Railway. He has appointed Dr. D. Walter Spence assistant surgeon in Springfield.

Smallpox in Ohio.—The annual report of the State Board of Health shows that during the year ended June 30, there were 3229 cases of smallpox with 44 deaths. Failure to stamp out the epidemic is ascribed to carelessness and lack of recognition of the disease on account of its mild form.

College Faculty Changes.—At Ohio Medical College, Dr. Benjamin K. Rachford becomes professor of diseases of children, and Dr. Allyn C. Poole, professor of materia medica and therapeutics. Dr. David I. Wolfstein will occupy the newly-established chair of nervous diseases at the Cincinnati College of Medicine, Dr. C. W. Fangeman will be professor of ophthalmology, Dr. Harry Freudenberger, of pathology, and Dr. Theodore W. Schmidt of chemistry.

PENNSYLVANIA.

Dr. Daniel P. Blose, McKeesport, will sail in a few days for Germany.

The Lancaster Board of Health met on August 3 for organization. Dr. Daniel R. McCormick formally declined reappointment. This leaves a vacancy to be filled.

Dr. J. Madison Taylor, Philadelphia, has resigned the professorship of diseases of children in the Polyclinic College for Graduates, which he has held for the past fifteen years.

Hospital Staff.—The McKeesport Hospital trustees, on August 1, elected Drs. J. C. Greenfield, Penn Line, A. A. Peterson, Allegheny, and W. I. Allison, Hopedale, Ohio, as resident physicians.

Dr. Stewart L. McCurdy, at present professor of anatomy and surgery in the Dental Department of the Western University, has been elected professor of orthopedic surgery in the Western Pennsylvania Medical College (Medical Department of the Western University of Pennsylvania), Pittsburg.

SOUTH CAROLINA.

Dr. John H. McCullough, Newberry, has been elected county physician to fill the unexpired term of Dr. George B. Caldwell, deceased.

Dr. Charles M. Rees is acting as health officer of Charleston until an election can be held to fill the place vacated by the death of Dr. Henry B. Horlbeck.

Medical College Scholarships.—Seven appointments to scholarships in Charleston Medical College have been announced by the governor. The appointee from the First District is a young woman.

SOUTH DAKOTA.

Dr. Henry Van Ostrand, a pioneer physician of Yankton, is dangerously ill.

Addition to Hospital.—The Benedictine Sisters are building a $20,000 three-story cut-stone addition to their hospital at Hot Springs, in the heart of the city, on ground donated by citizens.

Dr. Hiram E. McNutt, Aberdeen, has resigned as superintendent of the Brown County Board of Health, because of the failure of the county commissioners to give him adequate compensation for his services in smallpox cases.

WISCONSIN.

A "magnetic healer," of Ripon, was arrested, August 7, charged with violating the medical laws of the state, and was placed under bonds of $200.

Smallpox at Colby.—The secretary of the State Board of Health has notified the local health board of Appleton that seventeen cases of smallpox at Colby are directly traceable to an unidentified man who was recently examined by an Appleton physician and allowed to proceed on his journey to Colby.

The Wauwatosa site for the proposed new isolation hospital of Milwaukee County is favored by Health Commissioner Dr. Ferdinand M. Schulz, of Milwaukee, who believes that a suitable building could be erected 300 or 400 yards from the present county hospital so that there would not be the least danger from contagion and which would be convenient to all parts of the county.

GENERAL.

Royal Palace Converted into Hospital and Asylum.—The Italian palace near Milan, where King Humbert was staying when he was assassinated recently, will be converted, by his son and successor, into a hospital and asylum for children.

Island for Filipino Lepers.—A board of officers, convened in accordance with orders from the district commander, has recommended, for the segregation of lepers, the Island of Barri. It is north of Luzon, uninhabited and two miles long by one wide.

Honors to a Dentist.—The Berlin papers state that the University of Pennsylvania has conferred the title of Doctor of Science on Dr. Miller, professor of odontology at Berlin. This is the first time that this title has been conferred on a dentist; it was won in this case by Miller's scientific researches.

Mr. Henry Mervin Shrady, the young sculptor, who has been selected to make the equestrian statue of Washington to be presented to the borough of Brooklyn, is a son of Dr. George F. Shrady, editor of the *Medical Record.* Although quite young, Mr. Shrady has already a high reputation as a sculptor.

The Lane Medical Lectures, San Francisco.—Mr. Malcolm Morris, M.R.C.S. Eng., and editor of *The Practitioner,* London, will deliver the 6th course of these lectures, on skin diseases, in the Cooper Medical College, San Francisco, September 2 to 6, giving two lectures daily, at 11 a. m., and 8 p. m.

State Board of Dental Examiners Resign by Request.—On complaint of James H. Worman, consul to Munich, Bavaria, a charge of issuing licenses irregularly has been made against the Illinois Dental Board of Examiners. Governor Yates asked for the resignation of the members of the Board, and the secretary was arrested, but subsequently released on $3000 bail. Consul Worman says his chief evidence is that a certain Emil Gumpoldt left Munich in April, 1900, and returned in little more than four weeks provided with a diploma of a Chicago college and a license to practice in the State of Illinois.

CANADA.

Dr. Charles Doherty, superintendent of the Kootenay Lake Hospital, Nelson, B.C., is spending his vacation in Toronto.

A Medical Student Drowned.—Mr. John C. Carlaw, a third year medical student at Trinity Medical College, was drowned in Lake Ontario on the 9th inst.

Dr. W. T. McArthur, Los Angeles, Cal., is making a short stay in Toronto on his way home from England, where he has been successful in obtaining the degree of F.R.C.S.

The Pharmaceutical Association of Manitoba will hereafter refuse to recognize Ontario diplomas; this will mean that Ontario graduates can not practice in the Western Province. It is altogether likely that the Ontario druggists will retaliate.

Dr. P. H. Price has returned to Toronto after inspecting the Muskoka summer resorts. He reports an increasing sanitary vigilance on the part of the cottagers. Some years ago typhoid was very prevalent on account of the cottagers carelessly disposing of refuse in the lakes, but this has been largely overcome.

The Canada Lancet, which was founded thirty-five years ago by the late Dr. Fulton, has been purchased from Dr. G. P. Sylvester by the Ontario Publishing Company, of Toronto, the proprietors of the *Canadian Magazine.* It is understood that the journal will be enlarged and improved, but will retain the same editorial staff.

Death of an Old Physician.—Dr. John Barnhart, who formerly resided in Owen Sound, Ontario, passed away in Toronto on the afternoon of the 9th inst., having attained 88 years of age. He was one of Canada's pioneer medical men and was a student of the late Dr. Widmer, of Toronto. He received his medical education in New York.

Indians Must Register.—The Ontario Government has passed an order-in-council appointing registrars to record the births, deaths and marriages occurring on the Indian reservations. The Registration Act calls for registrars in every portion of the province, and since the reservations are not townships, the registrars of the adjacent townships have been assigned the duty.

Toronto Physician Suicides.—Dr. Overton F. Macdonald, of Toronto, a homeopathic practitioner, ended his life on the afternoon of the 8th inst. by shooting himself through the heart with a breech-loading shotgun. He is said to have unsuccessfully attempted to end his life a few days prior thereto by taking poison. He had not been in his usual good health for some time past, having suffered from mental trouble, induced through a recent attack of la grippe. He was thirty-nine years of age, and was graduated from the Cleveland Homeopathic Institution some years ago.

The Council of the Ontario College of Pharmacy, which has been in session in Toronto during the past week, has decided

to establish subsidiary associations in the thirteen districts into which the province is divided. The representatives on the Council from those districts will be at the head of these minor bodies and will be provided with funds to pay for the expenses of their organization. The special committee on behalf of the druggists, which was appointed to confer with the Ontario College of Physicians and Surgeons with regard to the recent trouble in connection with "counter prescribing," stated that on account of no conference having taken place between representatives of the two bodies, that the matter was still unsettled, but they hoped to come to some understanding soon.

Caring for Consumptives in Toronto.—The Executive Committee of the National Sanitarium Association met at the Sanitarium, Gravenhurst, Muskoka, on August 7. The Committee found the capacity of the institution severely taxed, a number of patients occupying tents on the lawns and a number more on the waiting list for admission. The physicians reported an increasing number of applicants in whom the disease was too far advanced for treatment. The committee visited the building site of the Gravenhurst Free Hospital for Consumptives; and it is expected from all appearances that the building will be ready for patients in November. This new building is to be supported by voluntary contributions, and is intended for consumptives in the early stage of the disease. The principal business of the meeting was to discuss the plans of the Toronto Home for Consumptives. At the present time the hospitals throughout the country do not make provision for the study of tuberculosis; and the proposed plans of the Toronto Home will obviate these difficulties.

FOREIGN.

Death of Von Widerhofer.—The Vienna Medical School has lost one of its most popular professors in H. von Widerhofer, the eminent pediatrist, who died July 28, in his 70th year.

A New Egyptian Medical Journal.—*L' Egypte Medical* is the title of a new periodical to be published at Alexandria in French by A. Ruffer, president of the Conseil Sanitaire of Egypt.

International Congress on Seasickness.—Ostende, in Belgium, is holding an international congress on seasickness, with an exposition of all measures that have been devised against it, to continue two months. The congress is under the auspices of the League against Seasickness, which has its headquarters at Paris, 82 Boulevard Port-Royal. (Ligue contre le Mal de Mer.)

Profs. Finsen and Pavloff Get Rich Prizes.—Professor Finsen of Denmark and Professor Pavloff, the Russian physiologist, have been awarded each 200,000 crowns ($50,000) as prize money from the $2,000,000 left by the late Alfred Nobel, a Swedish millionaire, for the advancement of science. Finsen is noted for his treatment of cutaneous affections by certain light and electric rays, and Pavloff is known by his researches in nutrition.

PARIS LETTER.

Death from Medullar Cocainization.

In the last Paris Letter mention was made of a case of death following rachi-cocainization. Another case has recently been reported to the Society of Surgery by Dr. Bousquet, of Clermont. The patient, a woman, was operated for a strangulated hernia, and only two centigrams were injected. Almost immediately after the injection most serious cardio-pulmonary symptoms were observed, there being extreme pallor, dyspnea and a very rapid pulse, against which injections of ether and caffein were made during three-quarters of an hour. Artificial respiration was also resorted to. Some improvement took place, followed, however, by extreme agitation, and death took place at 2 o'clock the following morning, the patient being in a comatose condition.

Tetanus.

The discussion on tetanus has been kept up, Dr. Bagy insisting upon the fact that Dr. Vaillant's researches have shown that tetanus is intimately associated with suppuration, and Professor Berger contradicting this statement, and stating that a long list of cases could be cited where there was no superficial wound, and in which tetanus took place. It must be admitted that a good deal of the enthusiasm which was shown for this treatment by antitetanic injections has died out.

Test for Purity of Water.

At a recent meeting of the Academy of Sciences, a most interesting method for recognizing the purity of water was described by Mr. Causse. This author has already described the effect produced on contaminated water by two other reagents, Schiff's solution and paradiazobenzene-sulfonate of sodium. A third reagent would be what is crystalline violet or hemamethyl triamidotriphenylcarbinol. A sulphurous solution of this reagent comes back to its original color when poured into pure water. Otherwise this phenomenon does not take place. The reagent can be readily prepared by dissolving 25 centigrams of crystallized violet in 250 cubic centimeters of a saturated solution of sulphurous acid in water.

Gelatin in Treatment of Aneurism.

A good deal of discussion was elicited three years ago by a novel method advocated by Dr. Lancereaux for the treatment of aneurism, and which consisted in the subcutaneous injection of a solution of gelatin. At one of the last meetings of the Academy of Medicine this subject was again brought forward, and Dr. Lancereaux remarked that the causes of failure were insufficiency in the technique employed, or else the use of this treatment in cases of fusiform aneurism. Dr. Lancereaux presented to the Society two patients, one having a subclavian aneurism, and the other an aneurism of the aortic arch, which had already attacked the sternum. Considerable amelioration was brought about by the use of the gelatin injections.

Post-Graduate Courses.

Post-graduate courses have been so far unheard of in France, but it would seem that at last there is a chance of some new institutions being established which will furnish the medical graduate with the means of completing his education. Dr. Jayle, assistant of Professor Pozzi, has just published an article on this subject in the *Presse Médicale*. The initiative of this new departure does not come from the Faculty of Medicine, which will remain closed as usual during the summer, but from the municipal counsel, which has already established two new professorships, one of pediatrics and the other of gynecology. One of the members of the counsel proposes the creation of a municipal institute of applied medicine, where instruction would be given to physicians having already graduated. The courses would only last two or three months, and would be made by some of the most noted physicians and surgeons of the hospitals. These courses would not be gratuitous, and the number of students would be limited thereby.

Mosquitoes and Leprosy.

At the meeting held by the Academy of Médecine on July 30, the subject of the influence of mosquitoes on the general health was discussed at length. Dr. Blanchard said he considered that leprosy could be transmitted by mosquitoes, and Dr. Chantemesse remarked that leprosy was caught generally at night. Dr. Hallopeau said that leprosy was a disease seen generally in very warm or very cold countries, where mosquitoes are found.

Poisoning from Dye.

Professor Landouzy made a report on a case of poisoning by the use of socks, in a child. According to Dr. Riche, the dye, which is composed of aniline, is dissolved in aniline oil.

Correspondence.

Oversupply of Medical Graduates.

GENEVA, PA., Aug. 12, 1901.

To the Editor:—Much has been written lately concerning the oversupply of physicians in the United States. Permit me to say a word on the negative side of the question.

All the writers noted so far taking as a basis the recent census—which shows a ratio of 1 physician to 600 population—reason *a priori* that this is largely in excess of the demand.

The facts, I believe, do not support this conclusion, particularly in the rural districts throughout the north and west, with which I am familiar.

In villages and towns varying in population from 500 to 2000, nine out of ten physicians will claim to be making from $2000 to $3000 per annum. More will be found who claim to be making in excess of $3000 than those who will admit that they are making less than $2000.

These statements are corroborated by the "Locations for Sale" column of THE JOURNAL. Compare these figures with the salaries received by ministers and school principals in

these towns. While I have no statistics at hand to prove my assertions, probably not 5 per cent. receive as much as $2000 a year while the major portion of them are receiving salaries of less than $1000.

Right here lies the real cause of the large number of medical students. The medical schools are largely recruited from the rural districts, and the cause is evident. While the country physician does not receive a large income according to city standards, it is large according to the standards of the community in which he lives. Living expenses in the smaller towns are low and the physician is enabled thereby to live well and in a comfortable home. Furthermore, he is an honored and respected citizen. Naturally the ambitious young man sees this, and emulating the example, studies medicine.

We, as a profession, disavow commercialism, and it is our proud boast that we stand hand in hand with the ministers and teachers in laboring for the welfare of humanity. This being true, an unbiased judge would surely decide that we have no just reason for claiming greater compensation for our services.

If we are honest in our protestations of non-commercialism we could not object to this. Whether we object or not as long as the present conditions prevail the proportion of physicians will undoubtedly increase. There are yet many hamlets throughout the country without physicians where a physician could earn a fair living, and these doubtless in the future will absorb a large number of the graduates.

Dr. Brower used to tell us at "Rush," never to locate in a town that had no physician, as there was nothing to be made in a place where there was no physician. I do not believe, however, that this is invariably true.

While I am not familiar with conditions in the city, I would suggest that possibly the cause of the poverty of the many is due to the large incomes received by the few who are especially proficient or popular, and the question is simply one of the "survival of the fittest" which prevails in all trades and professions.

A. W. CLOUSE, M.D.

Married.

T. EBEN REEKS, M.D., to Miss Katherine C. Garrison, both of Newburg, N. Y., August 7.

JOHN H. GROSHANS, M.D., to Miss Nellie L. Wheeler, both of Baltimore, Md., at Wilmington, April 29.

JAMES A. TAGGART, M.D., Salamanca, N. Y., to Miss Sarah H. Johnson, Buffalo, at the home of the bride, August 7.

AUGUSTUS WRIGHT IVES, M.D., Detroit, Mich., to Miss Julia Clare Chandler, Ogdensburg, N. Y., at the home of the bride, July 31.

MAJOR RALPH S. PORTER, Surgeon U. S. V., formerly of Chicago, to Miss Lydia Kilgour, Glen, Md., at Rockville, Md., August 7.

LIEUT. ALLIE WALTER WILLIAMS, Acting Assistant-Surgeon, U. S. Army, stationed at Governor's Island, to Miss Elizabeth Morris Semple, Washington, at Jersey City, N. J., August 3.

Deaths and Obituaries.

Jesse Hawes, M.D., University of Michigan, Ann Arbor, 1868, Long Island College Hospital, Brooklyn, 1871, died at his home in Greeley, Colo., from angina pectoris, August 4, aged 58. At the age of 18, he enlisted in the Ninth Illinois Infantry, serving until captured during an engagement in 1864, and until the close of the war was confined in Cahaba prison, Alabama. This imprisonment, together with a wound received in a battle in 1862, left his health permanently impaired. He has written a book entitled "Cahaba," which is of considerable historical value, and in which he described his prison life. He practiced for a time in Iowa, but in 1872 he went to the newly founded town of Greeley, where he made his permanent home. He was a member of the first Board of Medical Examiners of Colorado, and later was on the State Board of Health, doing much to elevate the character of the profession. He was an ex-president of the State Medical Society, a trustee of the State Normal School, and at one time was Lecturer on Obstetrics in the University of Denver. At the Detroit meeting, in 1892, he was elected fourth vice-president of the American Medical Association. He was a member of the National Association of Railway Surgeons, and the American Academy of Railway Surgeons.

William A. Newell, M.D., University of Pennsylvania, Philadelphia, 1839, died at his home in Allentown, N. J., August 8, aged 84. He was the originator of the United States life-saving service, and was appointed by President Lincoln superintendent of that work in this country. He was the first republican governor of New Jersey, serving from 1857 to 1860, was a member of congress, 1847-48, 1865-67, and was Governor of the Territory of Washington from 1876 to 1880.

Frank K. Paddock, A.M., M.D., Berkshire Medical College (now extinct), 1864, died at his home in Pittsfield, Mass., July 26, after a long illness, aged 60. He was at one time dean of the Berkshire Medical College, in which college he held a professorship until its dissolution in 1867, and has been chief surgeon to the Pittsfield House of Mercy from the time that it was founded, in 1875. He served two years as president of the Massachusetts Medical Society.

Charles Hampden Field, M.D., Medical College of Alabama, Mobile, 1878, died from inhalation of illuminating gas at Alameda, Cal., August 6. He was surgical dresser at King's College Hospital, London, 1874-5, and was later an acting assistant-surgeon, U. S. Army. As an examining surgeon of the Pension Bureau he served seven years. He was a practitioner at Price, Utah, and was formerly located at Rock Spring, Wyoming.

David Kennedy, M.D., College of Physicians and Surgeons, New York, 1860, died of apoplexy while addressing a public meeting, August 5, aged 65. He was at one time mayor of Kingston, N. Y., where he had long resided. During the civil war he was a surgeon and took part in several important engagements; later he was stationed at Fortress Monroe, and then at the Saterlee Hospital, Philadelphia, until the close of the war.

Abia H. Light, M.D., University of Pennsylvania, Philadelphia, 1862, died at his home in Lebanon, Pa., July 21, after a long illness, aged 62. During the civil war he was a surgeon in the Pennsylvania Volunteers, and in 1864-65 he was the chief executive officer of the general hospital at Washington. He was in McClellan's retreat from the Peninsula, and also was with Gen. Sherman in his famous march to the sea.

James V. Kendall, M.D., Geneva Medical College, Geneva, N. Y. (now extinct), 1844, died at his home at Baldwinsville, N. Y., August 5, aged 83. During the civil war he was surgeon of the 149th New York Volunteers, serving from 1862 to 1865. In 1869 he was a member of the Assembly from Onondaga county and was always active in politics, but without sacrificing his interest in medicine.

Hiram O. Bolles, M.D., Philadelphia College of Medicine and Surgery, 1865, died at his home in Springfield, Ill., August 8, aged 63. During the civil war he was a surgeon at the military hospital at Savannah, Ga., and served until the end of the war. He was president of the Board of Water Commissioners of Springfield for many years and a member of the City Council.

William W. Watkins, M.D., Washington University, St. Louis, 1872, was shot and killed by an insane man, while driving through the streets of Moscow, Idaho, where he lived. At one time he practiced in St. Louis, Mo., but went West on account of his health in 1884. He was a member of the American Medical Association, and was 55 years of age.

Frank P. Bingham, M.D., University of Buffalo, 1899, while riding a bicycle in Buffalo, was struck by a street car and killed almost instantly. He was 28 years of age and was recently appointed on the staff of the German Hospital Dis-

pensary, having formerly been house physician in the German Deaconess Hospital and the German Hospital.

Nathaniel **M. Jones, M.D.,** University of Wooster, Cleveland, Ohio, 1866, who has been a practitioner of Cleveland for twenty-six years, died at his home there, August 1, aged 61. He served for three years during the civil war as an assistant-surgeon.

Newton **Sedwig Read, M.D.,** Western Reserve University, Cleveland, 1844, died at Virginia, Ill., August 10, aged 81. He was a native of Ohio, but since 1852 he had practiced in Cass County, Illinois.

Lyman **P. Stookey, M.D.,** Missouri Medical College, St. Louis, 1872, died at his home in Belleville, Ill., August 2, aged 57. He was at one time president of the St. Clair County Medical Society.

George **A. Sweeney, M.D.,** University of Pennsylvania, Philadelphia, 1898, died at Chester, Pa., August 2, from smallpox contracted while acting as quarantine officer.

Frank **R. Eversole, M.D.,** Missouri Medical College, St. Louis, 1876, died from carcinoma of the stomach, at his home in St. Louis, August 4, aged 46.

Albert **S. Elliott, M.D.,** Western Reserve University, Cleveland, 1892, died at his home in Cleveland, August 2, from typhoid fever, aged 30.

Benjamin **A. Oglesby, M.D.,** Hospital College of Medicine, Louisville, Ky., 1890, died at Louisville, August 4, after an illness of two years.

Edwin **E. Whitcomb, M.D.,** University of Buffalo, 1875, died at his home in Rochester, N. Y., from paralysis, August 1, aged 50.

Miscellany.

Italian Congress of Pediatrics.—The principal subjects to be discussed at this congress which convenes at Florence, October 15, are "Primary Infantile Atrophy," "The Septic Condition of the Respiratory Apparatus in Early Infancy" and "Acute Gastro-Intestinal Affections in Infancy."

New Phase of Professional Responsibility.—A Paris court recently awarded damages to a patient who had been burned by sublimate used by mistake for cocain. The cocain bottle was empty and the operator sent one of the nurses in the hospital to have it filled. The court censured the operator and awarded damages because he had not gone, personally, to fill the bottle.

Contagiousness of Leprosy.—An instance of acquired leprosy is related in the *St. Petersb. Med. Woch.* A Russian soldier returned home with leprosy. Six years later his mother developed the same disease, with the same symptoms as her son, and both died of general marasmus. Three years later the soldier's sister developed the disease, and, after another three-year interval, her husband also.

Infant Hygiene in Paris.—The Paris prefect of police has had the walls placarded with a circular calling attention to measures of infant hygiene during the heated term, warning not to wean infants, nor feed them from bottles with tubes, to boil all the bottles, etc., and protect them from dust, and to refrain from giving fruit to children under 3 and over this age only in moderate amounts, and cooked, and finally, at the first symptom of disturbance on the part of the child to summon a physician.

Treatment of Elephantiasis with Injections of Calomel.—S. Schaginjan reports that a case of elephantiasis improved remarkably under subcutaneous injections of calomel in a 5 per cent. suspension in vaselin oil. In the course of two and one-half months .9 calomel was injected at intervals from three to eight days. The size of the limb diminished very much; the tissues gradually assumed their normal aspect. The edema vanished completely and the patient was able to move about, for the first time in years.

The Monument of the Internat.—A bas-relief in marble is to be erected in the inner court of the Paris Hotel-Dieu next spring, on the occasion of the centennial celebration of the founding of the "internat," or system of internes in hospitals. The bas-relief is to represent the operation of tracheotomy, as before the discovery of serum treatment of diphtheria, the efforts of the internes to save the lives of children suffocating in croup were the cause of many deaths among them. The names of these victims of their profession will be inscribed at the base of the tablet.

Radiotherapy in Ophthalmology.—E. A. Nesnamow describes in *Westnik Oft.*, 1901, 1, his experiments with radiotherapy of the eye, applied according to Finsen's principles. After convincing himself on rabbits of its efficacy, he tried it in seven clinical cases with surprisingly beneficial results. The portion of the human eye which contains no blood vessels is peculiarly adapted to be submitted to the action of the violet rays. Severe suppurative affections of the cornea were improved by this treatment so that operation was rendered unnecessary. Suppuration after a cataract operation was arrested and retrogressed under the influence of the rays. The light seemed to soothe the pain. No injurious effect on the retina was observed.

Abdominal Diagnosis.—In a communication to the *Ztft. f. Klin. Med.* xxxvi, A. Fuchs calls attention to the valuable information that can be derived in regard to condition of the intestines by injecting a fluid. Colic pains and contractions usually follow this procedure, but there is nothing of the kind if the intestines are first evacuated with glycerin, and then, after a time, .75 to 1 liter of 8 to 10 per cent. salt solution are cautiously injected. The entire large intestine becomes palpable. The clinging of the intestinal walls to fecal tumors is detected by this means. The flexures of the colon and cecum stand out distinctly, and all the abdominal organs are influenced by the change in the shape, size and position of the intestines and are thus more readily palpated.

Gelatin Tubes for Suture of Nerves and Tendons.—Tubes of decalcified bone and magnesium have been suggested for the suture of nerves and tendons, but these substances are absorbed too rapidly to answer the purpose in all circumstances. G. Lotheissen, of Innsbruck, finds that gelatin tubes, hardened in a 2 per cent. solution of formol, for forty-eight hours, fulfill all the desired conditions for the suture of tendons. The tubes are not absorbed for six weeks. In suturing nerves, he uses tubes that have been in the formol solution for sixty-two hours, which resist absorption for two months. In case of loss of nerve substance, requiring a long time for regeneration, he advises soaking the tubes for six or seven days in the formol. He has used these tubes to suture nerves or tendons in seven cases and found the results perfect in all except one case in which it proved impossible to obtain primary intention and consequently the tube dissolved in four days. Prevention of the formation of adhesions with adjacent tissues is one great advantage of tubulization.

Patent Medicine in Austria.—The United States consul general at Vienna, Austria, C. B. Hurst, has this to say regarding patent medicines in Austria:

"In consequence of many inquiries addressed to this Consulate General in the matter of the government regulations in Austria regarding the importation and sale of patented medicinal and chemical preparations, I would report that the sale of 'arcana,' or secret remedies, has always been strictly forbidden in this monarchy. Trade in such medicines and advertisements of the same are under strict surveillance of the law. Further, those medicinal preparations of which the prescriptions are not open to inspection by physicians, or in the prescription of which the substance of the medicinal ingredients can not be definitely recognized as to kind and quantity, may not be kept for sale in apothecaries. Only those manufactures may be considered as pharmaceutical specialties that contain drugs acknowledged to be medicinal remedies, as, for instance, balsam copaibæ, oleum santali, and the like. Every new medicinal preparation intended for use by the public must be reported to the authorities, and its sale may not be begun until said authorities have found no reason to prohibit the same. Prescriptions of foreign medicines must be accompanied by

precise directions for their preparation from the foreign manufacturer, and be provided with his signature and business stamp. Altogether excluded are cosmetics that by their labels, wrappers and advertisements are affirmed to be efficacious in the removal of personal blemishes—impure skin, freckles, liver spots, and baldness—and are, therefore, qualified as remedies. The regulations in Austria in regard to the advertisement of patent medicines are likewise strict. All laudatory notices in local publications of cures and remedies coming from abroad constitute a transgression of the trade laws, and, under certain circumstances, foundation for complaint of unlicensed medical practice."

Technique of Draining the Uterus.—Gauze drains sometimes fail to evacuate all the secretions, and tubes are liable to be expelled. F. Franke uses an ordinary rubber drain inserted in the uterus and fastened in place with one or two stitches. By this means the cervix is permanently dilated and drainage can be maintained as long as desired without inconvenience.

Direct Franklinization of the Rectum for Constipation.—Bordier reports the successful cure of several cases of habitual constipation from atony of the intestines, by direct Franklinization according to Herz, of the rectum itself. He inserts the electrode into the rectum, a brass tube with a spherical tip, insulated at the portion corresponding to the sphincter. The sensation is not painful, resembling a dull shock without heat. The action is more vigorous if the electrode is connected with the outer armature of the Leyden jar at the positive pole of the machine.

An Illegal Practitioner Prescribes Poisonous Doses.—The New York State Medical Association are searching for a man in New York city who is practicing medicine illegally. This man is considered to be a dangerous person to be at large, as he has seemingly no knowledge of drugs. He recently wrote a prescription for a mixture to be taken internally that would have caused instant death. It was this prescription that led to his discovery. The prescription was given to a druggist to be filled by the man who had gone to the bogus doctor for treatment. The druggist said he could not fill the prescription, as it called for enough poison to kill many persons.—*N. Y. Med. Journal*, August 10.

The Saltpetriere and its Head Nurse.—According to a decree of Mazarin, who was prime minister of France about 1656 when the old saltpeter works at Paris were transformed into a great hospital and lunatic asylum for women, still known as the Saltpetrière, nurses serving continuously for twenty years were entitled to free board and lodging thereafter. Mlle. Bottard, who retires this month, entered the service as nurse in 1840, and has thus served for sixty-one years. Her skill and devotion won for her the ribbon of the Legion of Honor, very rarely conferred on a woman. Charcot used to say that he owed much of his success to her assistance.

Cure of an Enormous Dissecting Aneurysm.—A remarkable case of dissecting aneurysm as large as an ostrich egg, in the rear wall of the aorta, is described by F. Harbitz in the *Norsk Mag. f. Laegev.* for March. The aneurysm had been diagnosed seven years before the death of the patient, a man of 54, who succumbed to pulmonary and generalized tuberculosis. The aneurysmal sac was multilocular, and was supplemented by a canal commencing in the sinus of Valsalve and continuing along the aorta to its bifurcation, and thence along the primary iliac artery to an opening 3 cm. in diameter. Some of the arteries, such as the right renal, opened directly into this supernumerary aorta and probably prevented its rupture. It was lined with endothelium.

Resolutions Adopted by the Latin-American Congress.—The Congress passed resolutions, among others, in favor of the compulsory declaration, etc., of infectious diseases, of isolation hospitals, sanitariums or colonies for lepers, of hospitals for incurable consumptives and sanitariums for the curable cases, with seaside sanitariums for tuberculous children. Another resolution urged research on buccal respiration among children in the Latin-American countries. The Congress also voted in favor of the education of the public in regard to the increasing and imminent danger of hydatid infection, and advised that prophylactic measures be taught in the primary schools. In regard to the prophylaxis of yellow fever, resolutions were adopted in favor of substituting sanitary observation for disinfection. Sanitary inspectors for ships should be appointed in sufficient numbers, the expenses to be borne indirectly by the navigation companies. Subjects appointed for discussion at the next congress are the "Protection of Infancy" and the "Prophylaxis of Syphilis."

Too Many Doctors.—THE JOURNAL of the American Medical Association is of the opinion that there is a surplus of doctors in the United States, and regrets that the surplus is increasing. There is now one doctor to every 600 of population. As this is not on the whole an unhealthy country, one physician ought to be able to look after the aches and pains of a thousand ordinary people. Wherever more men are employed to perform any kind of service than are actually needed, either the community has to pay too much for services rendered or some of the men employed must be unable to make more than a bare living, if they make that. According to THE JOURNAL 1600 doctors die yearly, in spite of their skill, but almost 6000 are born. The medical colleges, although the requirements are severer than formerly, are turning out 6000 graduates a year. If this keeps on, how long will it be before there is one doctor for every 100 of the population? Then societies will have to be organized for the relief of starving M.D.'s. It is odd that so many young men should wish to study medicine when there are so many doctors, and when the physician has to face the competition of faith-healers and prayer-healers, who say they can cure any disease, and of "christian scientists" who assert that there is no such thing as disease. Probably the often-quoted statement that "there is always room at the top" in an overcrowded profession is responsible for the existence of numbers of poor lawyers and doctors. Nearly every young man who is about to begin the study of medicine is convinced that he will reach the top and will get the big fees for surgical operations or medical treatment that he reads of. Perhaps he will, but the chances are about 2000 to 1 against him. This is a point which medical colleges, naturally enough, do not impress on students. They do not endeavor to discourage the young men who are willing to pay them money for an education. But it would be a kindness to many of these, and to the community generally, if the authorities of medical colleges would tell many of their students that while "there is always room at the top," they never will get there—nor half way there—but will remain near the bottom, where it is always overcrowded, and hence ought to drop medicine and turn to something else.—Editorial, *Chicago Tribune*, August 1.

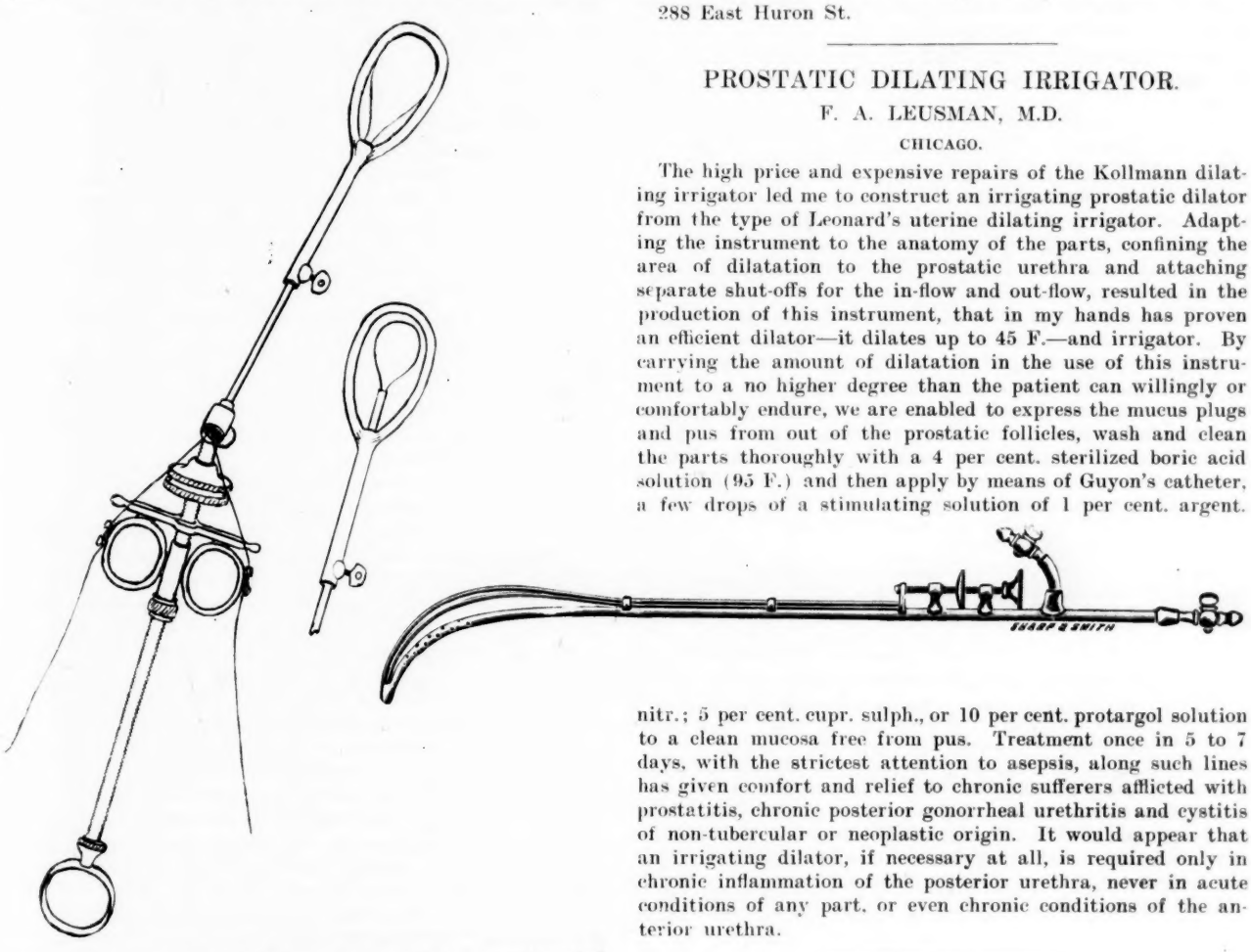
New Instruments.

A SNARE GUARD FOR INGALS' OPERATION OF ECRASEMENT OF THE TONSILS.

OTTO T. FREER, M.D.
CHICAGO.

The operation is described in detail in Ingals' "Diseases of the Chest, Throat and Nose," 4th Edition, page 435. It is done under anesthesia, the patient lying on his side with one arm behind his back and his face looking towards the operator and slightly downward. A gag is inserted, the tongue strongly depressed with a tongue depressor by an assistant, and the uvula seized with a slender forceps to hold it out of the way of harm. The tonsil is now grasped with an especially constructed forceps which includes in its blades the whole of the tonsillar substance, even to its deepest attachment between the pillars. If the latter are adherent to the tonsil they are separated by means of a palate hook as a preliminary. The loop of a strongly constructed snare is next passed over the forceps and beneath its beak around the attachment of the

tonsil, which is cut off by tightening the loop by means of a milled nut and screw thread. There are never more than a few drops of blood following the procedure. The operation will remove intramural or buried tonsils that will not come into the ring of the tonsillotome; it can be used to remove tonsils that offend by repeated inflammation, but are too small for tonsillotomy; it evulses the tonsil thoroughly from its bed, and on account of the practical absence of bleeding it can be employed as a preliminary to adenoid operations. The operation is therefore a very valuable one, but heretofore two factors have made it difficult and at times uncertain. The first of these was the tendency of Ingals' forceps to slip off from the tonsil seized. This occurs in small and soft tonsils and is annoying. To overcome this I have had the forceps constructed with three instead of two teeth to each blade, so that now these never loosen their grasp.



The second difficulty was more serious and compelled me to abandon the operation in one case. The wire loop instead of slipping over the forceps and under the tonsil became bent out of shape in the mouth by reason of muscular contractions of the tongue or lack of room. The wire would then encircle the forceps instead of the tonsil, necessitating the insertion of one or more new loops into the snare, and causing loss of time and embarrassment to the operator. For this reason I have constructed a steel snare guard which contains the wire loop in a groove. By means of this guard the loop can be slipped over the forceps and onto the tonsil rapidly and certainly, so that the operation can be performed without a halt. After the guard carrying the wire has been passed under the beak of the forceps the set screw which attaches it to the tube of the snare is loosened and the loop tightened over the tonsil. If this is not done the drawing in of the loop will thrust the snare guard back into the wall of the pharynx. While passing the guard over the forceps into the mouth the wire must be held in its groove by pressing it forward with the traveling carriage of the snare. An Ingals' snare is used with No. 5 steel piano wire. The instrument has proved very satisfactory to me and to others.

If the operation with the tonsillotome would accomplish in all instances what can be achieved by écrasement the latter method would be too complicated to compete with it, but tonsillotomy is not suited for the removal of intramural tonsils, and its use must necessarily be restricted to ablation of enlargements which project beyond the pillars, while the snare is eminently fitted to enucleate tonsils which are buried between them. The objection to the cautery operations devised for buried tonsils is the danger of secondary hemorrhage, and the fact that they are not well applicable to children.

288 East Huron St.

PROSTATIC DILATING IRRIGATOR.

F. A. LEUSMAN, M.D.
CHICAGO.

The high price and expensive repairs of the Kollmann dilating irrigator led me to construct an irrigating prostatic dilator from the type of Leonard's uterine dilating irrigator. Adapting the instrument to the anatomy of the parts, confining the area of dilatation to the prostatic urethra and attaching separate shut-offs for the in-flow and out-flow, resulted in the production of this instrument, that in my hands has proven an efficient dilator—it dilates up to 45 F.—and irrigator. By carrying the amount of dilatation in the use of this instrument to a no higher degree than the patient can willingly or comfortably endure, we are enabled to express the mucus plugs and pus from out of the prostatic follicles, wash and clean the parts thoroughly with a 4 per cent. sterilized boric acid solution (95 F.) and then apply by means of Guyon's catheter, a few drops of a stimulating solution of 1 per cent. argent. nitr.; 5 per cent. cupr. sulph., or 10 per cent. protargol solution to a clean mucosa free from pus. Treatment once in 5 to 7 days, with the strictest attention to asepsis, along such lines has given comfort and relief to chronic sufferers afflicted with prostatitis, chronic posterior gonorrheal urethritis and cystitis of non-tubercular or neoplastic origin. It would appear that an irrigating dilator, if necessary at all, is required only in chronic inflammation of the posterior urethra, never in acute conditions of any part, or even chronic conditions of the anterior urethra.

Societies.

COMING MEETINGS.

Rocky Mountain Inter-State Medical Association, Denver, Colo., Sept. 3-4, 1901.

American Association of Obstetricians and Gynecologists, Cleveland, Ohio, Sept. 10, 1901.

American Academy of Railway Surgeons, Chicago, Sept. 12-13, 1901.

Mississippi Valley Medical Association, Put-in-Bay, Sept. 12-14, 1901.

Conference of State and Provincial Boards of Health of North America, Niagara Falls, Sept. 13-14, 1901.

American Public Health Association, Buffalo, Sept. 16-20, 1901.

Medical Society of the Missouri Valley, St. Joseph, Mo., Sept. 19, 1901.

Medical Society of the State of Penusylvania, Philadelphia, Sept. 24-26, 1901.

American Electro-Therapeutic Association, Buffalo, Sept. 24-26, 1901.

Hartford County (Conn.) Health Officers' Society.—At the annual meeting of this Society, held at Hartford, August

1, Dr. Charles G. Rankin, Glastonbury, was elected president, and Dr. Wilber P. Bunnell, New Britain, secretary.

Southern Minnesota Medical Association.—The tenth annual meeting of this Association was held at Rochester, August 1, and the following officers were elected: President, Dr. Arthur S. Adams, Rochester; vice-presidents, Drs. Milan J. Hart, Le Roy, and Allan B. Stewart, Owatonna; secretary and treasurer, Dr. William T. Adams, Elgin. The next meeting will be held at Owatonna.

Central Wisconsin Medical Society.—At the annual meeting of this Society, held in Madison, July 30, the following officers were elected: President, Dr. James A. Jackson, Madison; vice-presidents, Dr. Ernest C. Helm, Beloit, Dr. Marshall T. Martin, Merrimack, Dr. Samuel R. Moyer, Monroe, and Dr. Ledyard V. Lewis, Sun Prairie; secretary and treasurer, Dr. Charles S. Sheldon, Madison.

Crow River Valley Medical Society.—At the nineteenth annual meeting of this Society, held at New Paynesville, Minn., August 6, the following were elected officers: Dr. Frank E. Bissell, Litchfield, president; Dr. Pierre C. Pilon, New Paynesville, vice-president; Dr. James W. Robertson, Litchfield, secretary, and Dr. Frank M. Archibald, Atwater, treasurer. The next meeting will be held at Atwater.

Northern Tri-State Medical Association.—The annual meeting of this Association was held at Angola, Ind., July 30, and the officers for the ensuing year were elected as follows: President, William H. Baldwin, Quincy, Mich.; vice-president, Dr. William J. Gillette, Toledo, Ohio; secretary, Dr. Hugh D. Wood, and treasurer, Dr. Theodore F. Wood, both of Angola, Ind. The next meeting will be held at Toledo, Ohio.

Lehigh Valley Medical Association.—The twenty-first annual meeting of this Association was held at Mauch Chunk, Pa., July 24, and the following officers were elected: President, Dr. Charles P. Knapp, Wyoming; vice-presidents, Dr. Joseph A. Horne, Mauch Chunk, Howard S. Reeser, Reading, William H. Hartzell, Allentown, and Edgar M. Greene, Easton; secretary, Dr. Charles McIntire, Easton; assistant secretary, Dr. William P. Walker; treasurer, Dr. Abraham Stout. The next meeting will be at Wilkesbarre.

Washoe County (Nev.) Medical Association.—The permanent organization of this Association was perfected at Reno, July 29, by the election of the following officers: President, Dr. H. H. Hogan; vice-president, Dr. George H. Thoma; secretary, Dr. S. E. D. Pinniger, and treasurer, Dr. George Fee, all of Reno. A standard scale of fees was adopted.

Multnomah County (Ore.) Medical Society.—This Society has just been organized and duly incorporated. The incorporators are the officers elected at the recent meeting in Portland, who are as follows: President, Dr. James T. Walls, Portland; vice-presidents, Drs. Thomas Darling, Mount Tabor, J. M. Short, Gresham, and Malcolm J. Jenny, Portland; secretary, Dr. Aaron Tilzer, Portland, and treasurer, Dr. Arthur J. Vail, Portland. The constitution has been signed by thirty-one physicians, and all of the regular practitioners express themselves as being heartily in favor of the movement. It is expected that as soon as the summer vacations are over almost all the regular physicians will be enrolled as members.

CALIFORNIA ACADEMY OF MEDICINE.

Regular Meeting Held at San Francisco, July 23.

Dr D. W. Montgomery in the Chair.

Gastro-enterostomy for Inoperable Carcinoma of Pylorus.

DR. J. HENRY BARBAT read a paper with the above title, reporting two cases.

The first case was one that he reported last year in THE JOURNAL (vol. xxxiv, p. 1405). Just prior to the operation the patient, a woman, weighed 83 pounds and was *in extremis*, having vomited almost incessantly for several months. At the time of operation the carcinoma involved the pylorus, and was adherent to the liver and the anterior abdominal wall, making it impracticable to attempt its removal, especially as the condition of the patient would not permit of any extended operative procedure. He therefore did a gastro-enterostomy according to Roux, using Murphy buttons instead of sutures. The patient's condition was so bad at the end of the operation that the abdominal wall was sewed with through-and-through sutures in order to save time. Her condition was very precarious for the first three days, but she did not vomit once and was able to take a small amount of nourishment. Her appetite became enormous and she began to gain weight immediately, weighing 93 pounds three weeks from the day of operation. At present she weighs over 150 pounds and feels as well as she has ever felt. The tumor which at the time of operation was fully three inches in diameter has apparently completely disappeared, and the patient suffers no appreciable disturbance of digestion. There are two ways that we can account for the disappearance of the growth; one is that it was not malignant, and the other that the physiologic rest of the pylorus caused a spontaneous arrest of the cancerous process with absorption of the tumor. Jessett, in the *Lancet*, reports the disappearance of a large pyloric tumor after gastro-enterostomy, the patient living ten years after the operation and the postmortem showing complete disappearance of the growth, which at the time of operation appeared to be a scirrhus of the pylorus.

He operated on another case last May, which also illustrates the benefit of these operations. The patient had been vomiting within a short time after the ingestion of food for a period of over one year before she scught the services of a physician. A mass could be felt in the region of the pylorus which was tender on pressure and which moved about within a limited area. The examination of the stomach contents showed complete absence of hydrochloric acid, and a diagnosis of cancer of the pylorus was therefore made. On opening the abdomen it was seen that the case was inoperable as far as removing the growth was concerned, because adhesions existed to all the surrounding structures, and besides the entire peritoneum, parietal and visceral, was studded with patches which were probably malignant. It was therefore decided to do a gastro-enterostomy, which was accomplished by means of two Murphy buttons, one between the stomach and the cut end of the jejunum, and the other between the proximal cut end of the jejunum and the side of that viscus six inches from the stomach. The patient made a perfect recovery, having no vomiting and being able to take nourishment the day following. The buttons came away on the tenth and eleventh days, respectively, and the digestive apparatus is working perfectly at this writing. She has, however, symptoms of undoubted involvement of the lungs, and will probably succumb to the disease shortly.

These cases show the great relief which may be afforded these most unfortunate sufferers, and in the first case the possible cure of the disease by means of a comparatively harmless operation, which, if it should result fatally, has simply shortened the awful misery which these patients suffer after the stenosis of the pylorus becomes almost complete.

The author believes that the success in these operations, especially when the patients are much exhausted, depends to a great extent on the rapidity with which the operation is completed, as cancerous patients do not stand long operations well; therefore, no time must be lost after opening the abdomen, and the operator must determine rapidly whether the tumor can be removed safely or not, or whether it will be best to do a gastro-enterostomy. His judgment is that unless the tumor mass can be easily lifted out of the abdominal cavity it is better to do the simpler operation, because if adhesions exist it will probably be found that the disease has extended so far that its complete removal is impossible, and any endeavor to break up adhesions in malignant disease is fraught with great danger, from hemorrhage, and fails to accomplish the purpose of the operation.

He believes that the success of the two operations reported is due to the fact that he made use of Murphy buttons instead of sutures in making the anastomoses. The first case would undoubtedly have died on the table if suturing had been attempted, because even the most expert surgeon can not place sutures with the same rapidity that the Murphy button can be inserted, and this patient's condition was such that they had difficulty in keeping her alive until the end of the operation.

Furthermore, the most frequent cause of death subsequent to the operation is infection due to leaking at the point of suture; this is reduced to a minimum by the use of the Murphy button, because the apposition by the use of this device is more

perfect than can ever be attained by the most expert suturing. The anatomical result after the use of the Murphy button is more perfect than by any other method because the first closure of the two portions of the button causes a pushing aside of the mucosa and muscularis, leaving nothing but the peritoneum and submucosa between the jaws of the button. After a few days the peritoneum, being less resistant than the submucosa, is also forced out, leaving nothing but the latter to hold the button in place. After the button has become separated and passed away the mucosa grows across the cicatrix so that no solution of continuity is apparent, even under the microscope. The two submucous layers are in perfect apposition, as is also the peritoneum; the only layer which is not anatomically correct is the muscularis, and it has been shown that as yet no method has been found to cause unstriped muscular fiber to unite in such a manner that no scar tissue intervenes.

Therefore, in favor of the Murphy button there are the saving of time, the ease of application and the superior anatomical result; the only argument against its use which could be put forth is the possibility of the button not coming away, and time and experience have shown that when this does occur it is due to either faulty technic or a faulty button. Some writers have complained that the opening made by the Murphy button is more likely to contract than that made by the suture method; this is certainly unreasonable in view of the perfect anatomical result obtained by the use of the button as compared with that obtained by the use of any other method. It is well to remember that the opening left by the button can not be larger than the diameter of the button itself, and one mistake which is often made by operators is to use a button of small diameter; one must use the largest button which can be easily introduced into the lumen of the small intestine when operating on that viscus, and the same rule holds good in the case of the large intestine. The fear that the button will not pass the ileocecal valve is more imaginary than real; while a few cases have been reported of this accident, he believes that if they were carefully investigated that one would find some disease of that portion of the bowel present which caused stenosis, because if this were not so the accident would happen much more often than it does.

DR. PHILIP KING BROWN said that he had seen the patient a few years ago and had made a diagnosis of carcinoma; at that time she had cachexia; vomited food and an examination of her stomach contents showed no free HCl, but large quantities of lactic acid. Immediate operation was advised; he thought that it must be admitted that the tumor was malignant. There were cases where tumors had disappeared before. He had seen a case in the Pennsylvania hospital where at the time of operation the growth was so large that it was thought best not to remove it, and the wall was closed up; three weeks later the tumor was much smaller. He thought that there could be no question that it was cancer; there were no symptoms of syphilis and the question of it being benign did not seem worth consideration. The history had been carefully recorded by Dr. Barbat, and if it could be proven in any way that it was malignant, the case would be an important one. When he saw her a year ago he told her that if she was not operated on immediately she would be dead in six months.

DR. JAMES MCCONE said that inflammatory masses in the abdomen were often mistaken for tumor formation. It seemed quite reasonable that one could find a tumor due to inflammation, if there was an ulcer, and one that was palpable, and he would certainly hesitate to make a diagnosis of cancer of the pylorus on the data given by Drs. Barbat and Brown.

DR. D. W. MONTGOMERY said that it seemed to him that if it was a scirrhus of the pylorus, then it must have been one of those slow, cicatrizing scirrhus tumors which created a much larger tumor than it would otherwise do, because of the irritation of the food rubbing up against it, and because of the stomach trying to force the food through the pylorus, which irritation being removed by the food passing in a different direction, the tumor growth alone continued. He thought that the view might be plausible. We know that some of these scirrhus carcinomas are exceedingly slow of growth, but the chances of their being slow are exceedingly rare. He had seen one case, however, of scirrhus cancer, which he removed postmortem from the posterior wall of the duodenum, about midway between the pylorus and the entrance of the bile duct. The man died of anemia simulating pernicious anemia. That was years ago. The tumor was quite small, about the size of a quarter of a dollar. The duodenum was evidently not stenosed, and the trouble in the stomach, which was enormously dilated, was probably a failure to shove the food along because the food irritated the surface of the cancer. Of course, the food did not digest, and the anemia increased. As the anemia deepened, the muscle fibers became slack because of poor nourishment, and the dilatation of the stomach increased. He was a long time ill, and the Doctor supposed the cancer to have commenced probably a considerable time before he showed signs of illness. A somewhat similar slowly growing cancer may be still growing at the pylorus of the patient under observation. In the operation, you simply switch the food, and relieve the irritation. He had no faith in the cure of the patient, if it was cancer. The inflammatory products are simply absorbed, and we do not find the tumor. He could not imagine that cancer of the pylorus could undergo spontaneous cure. Cancer of the breast is said to have done so by sloughing, but there was no sloughing here. If such a huge amount of necrosis had taken place, it would go into the peritoneal cavity. The fact that there is a tumor is not conclusive, there being no HCl is not conclusive, nor is the situation conclusive of cancer of the pylorus. But the fact that the patient got well is much more conclusive evidence that the patient never had cancer of the pylorus at all.

DR. BARBAT said in closing that the absence of HCl did not determine the presence of carcinoma, but was a confirmatory diagnostic point. The case had been gone over thoroughly, and all the classic symptoms of carcinoma of the pylorus had been found. On abdominal section he found that the tumor mass was part of the pylorus, circular in character, involving the entire thickness of stomach and pylorus; hard and firm, and presenting all the macroscopic appearances of cancer of the pylorus. Clinically the mass was carcinoma. In all malignant growths physiologic rest to the parts allows the inflammation to subside and possibly during the absorption of the inflammatory products absorption of the epithelial cells which formed the malignant growth could also have taken place.

Verrucae of Buccal Mucous Membrane.

DR. H. KUGLER reported the case of Miss N., 22 years, German, who had warts on her hands for many years. These disappeared three years ago; two years ago a small growth appeared on the inner surface of the lower lip; gradually more appeared until at the present time the inner surface of both upper and lower lips and the buccal cavity on either side, to the second molar teeth, are covered with small warty growths. Lately a few have made their appearance on the outside of the upper lip, near the margin of the skin. There is no pain, but they are frequently bitten, bleed freely and the main source of annoyance is their prominence and the consequent disfigurement the moment the mouth is opened.

Acute Lymphemia with Estival Malaria.

DR. PHILIP KING BROWN exhibited a patient, A. R., Frenchman, aged 44, resident of Fresno, who came to the Doctor in September, 1896, with a history of an occasional chill, continued fever, weakness and malaise dating back five weeks. No previous illness; no syphilis; no trauma. Patient a stout, well-built man, with yellowish color to skin not unlike jaundice, but the sclera was white. The temperature was 102.2; pulse, 120. The spleen was easily felt, not tender; the liver was 10 cm. in the right mammillary line. Heart and lungs presented nothing abnormal. Urine was negative. The glands all over the body were enlarged slightly, but not tender. There was no eruption, no bone tenderness. There was neither scar nor sore on penis; the tonsils were not enlarged nor inflamed. Blood examination showed reds, 3,820,000; whites, 42,000; hemoglobin, 65. Of the white cells 82 per cent. were mononuclear lymphocytes and were nearly all large. A few crescent forms of the estival parasite were found, but no young forms were seen. The patient died six weeks later. No autopsy was made.

Therapeutics.

[It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in every-day practice. Proper inquiries concerning general formulae and outlines of treatment will be answered in these columns.]

Treatment of Gastric Fermentation.

H. L. Esner, of Syracuse, N. Y., in *Internat. Med. Mag.*, recommends the following, stating his preference for the bismuth salts in combination with benzonaphthol:

℞ Bismuthi subnit. ..... gr. v | 30
Bismuthi salicylat. ..... gr. v | 30
Pulv. ipecac. ..... gr. 1/6 | 01
Benzonaphthol ..... gr. v | 30

M. Ft. chart. No. i. Sig.: One such powder after meals.

With the above he gives small doses of belladonna and strychnia, or nux vomica:

℞ Tinct. belladonnæ ..... m. lxxv | 5
Tinct. capsici ..... gr. xx | 1 | 30
Tinct. gent. comp. ..... ʒi | 32
Aq. puræ, q. s. ad. ..... ʒiv | 128

M. Sig.: One teaspoonful before each meal.

As to diet, he recommends the withdrawal of starches, sweets and cereals. Equal parts of milk with lime water in small quantities given at intervals of two hours if stomach is irritable. Later a mixed diet, including beef once daily, also eggs, milk, coffee and fruit for breakfast. Where fermentation is excessive, belching of gas annoying, constipation depressing, with pressure symptoms, he advises the following:

℞ Strychninæ sulph. ..... gr. i | 06
Ext. belladonnæ flu. ..... m. x | 60
Aq. laurocerosi ..... ʒiss | 48
Tinct. gelsemii ..... ʒiii | 12
Aq. puræ q. s. ad ..... ʒiv | 128

M. Sig.: One teaspoonful before each meal.

Treatment of Ulcer of Stomach.

To relieve the pain, vomiting and acid eructations in gastric ulcer the following is recommended by Ewald:

℞ Magnesiæ ust.
Sodii carb.
Potassii carb., āā ..... gr. lxxv | 5
Pulv. rhei ..... ʒiiss | 10
Sacch. lactis ..... ʒvii | 28

M. Sig.: As much as will rest upon the point of knife, dry on the tongue every hour.

Billings recommends the following to counteract the acidity:

℞ Mist. rhei et sodæ ..... ʒvi | 24

Sig.: Two to three teaspoonfuls after each meal.

Treatment of Simple Goiter in Adults.

Murray, in *Edin. Med. Jour.*, states that by administering thyroid extract in cases of simple parenchymatous form of goiter the prognosis is most favorable. When the extraordinary demand for thyroidal secretion is thus supplied, the hypertrophied gland is able to pass into resting state and thus undergoes partial atrophy, with consequent diminution in size. He compares this condition with the enlargement of the mammary gland during lactation, which as soon as the child is weaned and the demand for its secretion ceases, returns to a resting condition and decreases in size.

Treatment of Typhoid Fever in Children.

The following outline of treatment in typhoid fever is recommended by Legroux, as noted in *N. Y. Med. Jour.*: 1. Administer a purgative dose of mild chlorid of mercury, 5 to 10 grains in divided doses, as soon as the diagnosis can be made. 2. Administer naphthol according to the following indication:

℞ Beta naphthol ..... gr. xxx | 2

M. Ft. chart., No. x. Sig.: One powder every hour. To be given in the diarrhea of lesser intensity.

℞ Beta-naphthol ..... gr. xxx | 2
Bismuthi salicylatis ..... gr. xxx | 2

M. Ft. chart. No. x. Sig.: One powder every two hours when the diarrhea is abundant.

And when constipation is present the following:

℞ Beta-naphthol ..... gr. xxx | 2
Magnesii salicylatis ..... gr. xxx | 2

M. Ft. chart. No. x. Sig.: One powder every two hours.

To Prevent Recurring Attacks of Hay Fever.

Wright, in *Charlotte Med Jour.*, recommends the employment of frictional massage in this trouble. He states that by this means the mucous membrane of the nose is hardened and thereby lessens its hypersensitiveness, and increases its power of resistance. This can be accomplished by using a piece of surgical cotton on an applicator. Friction must be made over as much of the mucous membrane as possible and applied twice a day. In this way the membranes become accustomed to the contact with foreign substances and will be enabled to withstand the irritation from any exciting agent. He states that there are no less than 20 square inches of mucous membrane in the nasal passages and consequently emphasizes the importance of rendering this area resistant. He states that the results show this method to be a positive preventive.

Treatment of Hemorrhoids.

℞ Chloretoni ..... gr. xlviii | 3 | 10
Adipis benzoatis, q. s. ad ..... ʒi | 32

M. Sig.: Apply locally; or:

℞ Chloretoni ..... gr. xlviii | 3 | 10
Olei olivæ ..... ʒiiss | 10
Lanolini q. s. ad ..... ʒi | 32

M. Sig.: Apply locally night and morning after first cleansing the parts well; or:

℞ Chloretoni ..... gr. xxiv | 1 | 60
Lanolini ..... ʒiiiss | 14
Olei olivæ ..... ʒiii | 12
Liq. ext. hamamelidis ..... ʒi | 32

M. Sig.: Apply Locally. —*Lyon.*

Eczema.

For the treatment of the ordinary eczemas of children the following is recommended by Leistikow as the best ointment:

℞ Hydrarg. oxidi flavi ..... gr. iv-viii | 25-5
Adipis-lanæ
Zinci oxidi
Amyli, āā ..... gr. lxxv | 5
Vaselini ..... ʒiiss | 10

M. Ft. unguentum. Sig.: Apply locally once daily.

Treatment of Eczema.

W. R. Dalton, of New York, in *Phil. Med. Jour.*, still adheres to his theory as to the cause of eczema, that the chyme passing in a hyperacid condition from the stomach into the duodenum renders conditions such that the contents of the intestine can not be rendered sufficiently alkaline for proper metabolism. He believes that this condition leads to nearly all skin diseases. He, therefore, advises elimination of uric acid in conjunction with topical application. He advises strict diet, water in large quantities and at times a milk diet; an aseptic condition of the alimentary tract should be obtained as nearly as possible.

In cases of the strumous diathesis he recommends the following:

℞ Ammon. sulph.-ichthyol ..... ʒi | 4
Acidi arsenosi ..... gr. i | 06
Pulv. glycyrrhizæ q. s.

M. Ft. pilulæ No. xl. Sig.: One or two after each meal.

Kromoyer and Grueneberg, in *Deut. Med. Woch.*, state that there are three indications for treatment of eczema; 1, rest of the skin against irritation by means of powders and salves as protectors; 2, in chronic cases the removal of chronic tissue change by using remedies such as tar, sulphur, green soap, chrysarobin, etc.; 3, indication is the cauterization of the acute inflammatory areas. They state that lenigallol is a

remedy which can be used by the practicing physician with safety. It is the triacetate of pyrogallic acid, and is a white insoluble powder, but when placed on the crusts and pustules breaks up and causes a slight cauterization. They use it as follows:

R.	Lenigallol	3v	20
	Zinci oxidi	3ii	8

M. Sig.: To be used as a paste in mild cases, by spreading upon the skin and covering with absorbent cotton and a light bandage.

To Relieve Toothache.

The *Med. Standard* contains the following for relief of toothache when a physician is called upon to relieve the pain and the services of a dentist can not be secured:

R.	Orthoformi	gr. xv	1
	Acidi carbol	gr. xv	1
	Camphoræ	gr. xl	2 66
	Chloralis hydratis	gr. xl	2 66

M. Sig.: Dry the cavity and apply on absorbent cotton; or:

R.	Cocainæ hyd.	gr. iss	09
	Menthol	gr. xv	1
	Acidi carbol.	gr. xv	1
	Olei caryophylli	gtt. v	33
	Alcoholis (camphorated)	3ii	8

M. Sig.: Apply locally on cotton.

The *Med. Bulletin* recommends the following as an internal remedy for toothache:

R.	Quininæ sulph.	gr. ii	12
	Acidi hydrobrom.	gtt. xv	1
	Tinct. gelsemii	gtt. xv	1
	Syrupi	3iv	16
	Aq. destil.	℥i	32

M. Sig.: To be taken at one dose.

[The dilute hydrobromic acid should be used in the above prescription, which is only 10 per cent. strength of the pure hydrobromic acid; the latter should never be used internally.]

Treatment of Thrush Complicating Dentition.

The following combination has been used with good results in treatment of thrush in infants:

R.	Tinct. moschi (musk)	gtt iv	25
	Aq. calcis		
	Aq. lactucarii, āā	3ii	8
	Syr. simplicis	℥i	32

M. Sig.: Two teaspoonfuls every three hours.

Medicolegal.

As to Liability of Married Women for Doctors' Bills.—The Supreme Court of Wisconsin says, in the case of Stack vs. Padden, that while the statutes of that state have partially removed the common-law disability of married women to bind themselves at law by contract, that extends only so far as necessary or convenient to the beneficial enjoyment of their separate property or the carrying on of their separate business or in relation to their personal services. They can not at law bind themselves and their separate property to pay doctors' bills. But, perhaps with some significance, the court says that it was not dealing in this case with the proposition of whether a married woman possessed of considerable property might bind her separate property in equity by a contract for medical services rendered in treating her and her son.

May Order Private Examination by Selected Physicians.—The Supreme Court of Kansas holds, in the case of the City of Ottawa vs. Gilliland, that in an action to recover damages for personal injuries, the trial court has the power to require the injured party to submit the unexposed portion of his person to a private examination by physicians or surgeons appointed by the court, when, in the exercise of a sound judgment, it appears to the court that the necessity of the case demands such an examination. In actions for personal injuries the exact location and extent of the injury is frequently, it says, the very question in dispute—the fact to be ascertained. While the court, in the exercise of its discretion, should protect the feelings and sensibilities of all litigants, the rights of the parties and the ascertainment of the truth is the chief object of a trial. The purpose of a trial is to mete out exact justice. This can not be accomplished when the truth is suppressed, and this may be done if the court has not the power to ascertain what the truth is. In an action for personal injuries the injured party may call physicians to whom he may expose his person, not for the purpose of affecting a cure, but for the purpose of using this expert evidence to assist him in the trial of his case. He may also expose the injured portion of his person to the jury, observing the rules of decency. Should the litigant be permitted to withhold the truth or the means of ascertaining what the truth is, simply because, in the ascertainment of the truth he may conceive the idea that an indignity is being offered? That is not an indignity which is not intended. May he be permitted to present so much of the truth as he desires, and as he thinks to his interest, and withhold the remainder? This would certainly be his privilege if the court does not possess the power to make an order that will develop the exact truth. But an examination will not be ordered needlessly, or where an improper shock to modesty or feelings of delicacy would be likely. What is decided is only that the court has the power, and in each case it is to be exercised or not according to the sound discretion of the presiding judge. In other words, the Supreme Court thinks it safer in the administration of justice to trust to the courts to protect the sensibilities of the parties in such examinations, so far as it is possible to do so, and beyond that to hold them subordinate in importance and sacredness to the interest of justice, than to hold that a party to a litigation has it within his power to develop so much of the facts as may appear to be to his interest, and then stop the investigation. It also thinks that the great weight of authority favors this view.

School Trustees Must Enforce Board of Health Orders.—The Supreme Court of Indiana takes a different view in the mandamus case of State ex rel. Horne vs. Beil and others from that of the lower court. These proceedings were instituted to compel the school trustees of a city to enforce a rule or order adopted by the county and city boards of health requiring all children to be vaccinated before being permitted to attend any of the schools of the county or city respectively. Upon just what ground the lower court held the complaint in the case insufficient is left to conjecture. Apparently, however, the contention in that court of the school trustees was that the complaint was insufficient, 1, for failure to set out in haec verba or its exact wording the rule adopted by the board of health, and 2, that the rule, as adopted, was ineffectual for failure to set forth the facts constituting the emergency therefor. But the Supreme Court holds that there was no merit in either of these objections. The rule was not the foundation of the action. The rule, when properly adopted and promulgated, as was fully shown by the complaint, had the force and effect of law, and persons called upon to obey it had no right to demand postponement until the wisdom and reasons for the rule were first disclosed to them. Local boards of health are created and authorized by the legislature, and duty bound to adopt and enforce rules and regulations for the arrest and prevention of contagious and infectious diseases in their respective jurisdictions, whenever the necessity therefor arises. The question of necessity must, from the very nature of the object to be attained, rest within the discretion and judgment of the board of health which seeks to adopt and enforce the rule. It is the duty of the board to determine when there has been an exposure to a contagious disease, what constitutes an exposure, when the health of the citizens under its jurisdiction is threatened by an epidemic, and when the preservation of the health of the people demands that the board take action to prevent the spread of such infectious disease. And when the board has acted it will be presumed that sufficient facts existed to warrant its action, until the contrary appears. Furthermore, the court holds that the school trustees, as officers charged with the public duty of

managing the schools of the city, were the proper persons to be called upon to enforce the rule in question in such schools. Wherefore, the primary duty of the school trustees to enforce the rule in controversy being clearly exhibited by each paragraph of the complaint, the court orders that the demurrer thereto be overruled.

Changes About Allowing for Mental Suffering Alone.—The Supreme Court of Indiana in Western Union Telegraph Company vs. Ferguson overrules the Reese case wherein it adopted, in 1890, the doctrine, first announced in Texas, that the negligent causing of mental anguish alone is an actionable wrong. Among the reasons which it gives for changing its attitude on this subject are that, though courts should and do extend the application of the rules of the common law to the new conditions of advancing civilization, they may not rightfully create a new principle unknown to the common law, nor abrogate a known one, and that the mental-anguish doctrine is not a native sprout, but a foreign graft. Then, it says, there is no open or practicable means by which the damages occasioned by a negligent act that causes only mental anguish can be assessed. The parties to a lawsuit should have an even chance. The damage for which the plaintiff seeks compensation should be shown by evidence that the defendant may test, impeach, refute. When the plaintiff asks to recover for physical injuries, open or hidden, the court may require him, as a condition of prosecuting his case, to submit his person to an examination by medical experts, who may be called as witnesses by the defendant. The determination of the nature and extent of the physical hurt is not dependent upon the eloquence of the plaintiff as a witness, but upon the eloquence of the facts established by the evidence on both sides, which may not have included the verbal testimony of the plaintiff at all. Now, the mental anguish for which damages are allowable is incident to and dependent upon the nature and extent of the physical injury. And, although there can be no absolute standard for measuring mental anguish in terms of money, nor for measuring physical injuries, yet it is apparent that the differences between the physical injuries in two cases, established by evidence open to both sides, furnish a means of testing in some degree the existence and extent of the mental anguish of the respective plaintiffs outside of their mere assertions. But the mental-anguish doctrine awards damages for a state of mind that is not at all dependent upon or measurable by a cause of action existing outside the mental contemplation of the plaintiff, and provable by evidence open to both parties. Again, to be a law of equal justice and no discrimination, the mental-anguish doctrine should assert, as a broad general principle, that damages are recoverable, for mental distress alone, from every person whose negligent act causes that condition, whereas the rule is not the rule against any one except telegraph companies, and not against them uniformly. The difficulties of navigation without chart or compass, the court continues, are understandable without experiment, but the experiences of the courts that uphold the mental-anguish doctrine probably outrun any mere a priori conjecture as to possibilities. So, to apply its own phrase, it does not propose any longer to tempt the seas of uncertainty, in this direction, but to travel the ancient highway.

Current Medical Literature.

Titles marked with an asterisk (*) are noted below.

Boston Medical and Surgical Journal, August 1.

1 *The Fight Against Tuberculosis in the Light of the Experience Gained in the Successful Combat of Other Infectious Diseases. Robert Koch.
2 *Scientific Research: The Indispensable Basis of All Medical and Material Progress. (To be concluded.) George B. Ferguson.
3 *Practical Blood Examination. Henry F. Hewes.
4 Rachitic Deformities of the Spine. J. S. Stone.
5 *Measurements of Girls in Private Schools and of University Students. Arthur MacDonald.

Medical Record (N. Y.), August 3.

6 *Hemolysis. S. J. Meltzer.
7 *The Principles of Diagnosis of Lesions of the Spinal Cord. John Punton.
8 Cerebral Abscess; Operation, Recovery. Fletcher Gardner.
9 *Limitations of Surgical Work for the Insane. William J. Mayo.
10 *The Primary Treatment of Infected Wounds with Tincture of Iodin. Carl Beck.

Philadelphia Medical Journal, August 3.

11 Human and Bovine Tuberculosis. Leonard Pearson.
12 *The Importance of a More General Study of Disease of the Nervous System. Wharton Sinkler.
13 *The Mosquito an Insignificant Factor in the Propagation of Yellow Fever. John H. Purnell.
14 Typhoid Fever with Perforation of the Colon and Gall-Bladder; Operation: Death; Autopsy. Herman B. Allyn.
15 A Post-typhoid Case in Which During Four Months the Following Operations Were Performed. Andrew J. Downes.
16 Typhoid Fever Occurring in a Tuberculous Patient, and the Influence of Tuberculin on this Condition. Erwin Fischer.

American Medicine (Philadelphia), August 3.

17 *Important Sequels Resulting from Delayed Operation in Appendicitis. A. Stewart Lobingier.
18 *Two Cases of Vicious Circle After Gastroenterostomy. (To be concluded.) Theodore A. McGraw.
19 *The Subarachnoid Injection of Cocain for Operations on all Parts of the Body. A. W. Morton.
20 Twenty Years' Experience as Surgeon to Cambria Iron Company. W. B. Lowman.
21 Report of a Case of Hystero-epilepsy, in Which the Climax of the Seizure Was Expressed by Discharge of Blood Through the Intact External Auditory Canal. K. K. Wheelock.
22 *Some New Therapeutic Applications of Europhen. W. E. Thomas.
23 *Scientific Research: The Indispensable Basis of all Medical and Material Progress. George B. Ferguson.

New York Medical Journal, August 3.

24 *"Inoperable" Recurrent Cancer of the Breast; Relief by Beatson's Method. Robert Abbe.
25 *Cancer, Particularly Cutaneous Cancer. Ellice M. Alger.
26 *A Year's Experience in the Treatment of the Eustachian Tube by Means of the Electro-Bougie. Thomas J. Harris.
27 *Native Medical Practice in the Philippines, with Introductory Observations. Philip F. Harvey.
28 *Flagellated Malarial Parasite; Observations upon Its Structure, Showing that the Flagella are Performed in the Body of the Organism. John T. Moore.
29 Speculum of Bone, from Shot Fracture of Skull, Which Rested Against the Brain for Forty-four Years. D. S. Lamb.

Cincinnati Lancet-Clinic, August 3.

30 *Some Clinical Uses of Digitalis. Robert Ingram.
31 Clinical Reports on the Use of Digitalis. Frank Scheerer.

Medical News (N. Y.), August 3.

32 *Injuries of the Head in the New-born. Andrew F. Currier.
33 *The State of the Gastric Secretions in Chronic Rheumatism and Rheumatoid Arthritis. Frank H. Murdoch.
34 *The Administration of Ethyl Chlorid as a General Anesthetic, with Description of a Mask for Its Use. Martin W. Ware.
35 *The Therapeutic Uses of Tri-chlor-tertiary-butyl-alcohol. E. M. Houghton.
36 Belladonna vs. Scopolia. Reynold Webb Wilcox.
37 *Ulcer of the Duodenum Considered from a Surgical Standpoint. D. S. Fairchild.

St. Louis Medical Review, August 3.

38 *The Treatment of Gastro-enteric Infection in Infants. John Zahorsky.

Pediatrics (N. Y.), July 15.

39 Tuberculosis of Bone. J. Garland Sherrill.
40 *Growing Pains; What Are They? Their Treatment. J. A. Hale.
41 Multiple Sclerosis in a Child 5 Years Old. Philip F. Barbour.

Medical Fortnightly (St. Louis), July.

42 Diseases of the Stomach. (Continued.) J. M. G. Carter.
43 Saturnine Nephritis. Dr. Lancereaux.
44 "Ergoapical" (Smith): Its Therapeutic Indications with Clinical Notes. C. W. Canan.

American Practitioner and News (Louisville, Ky.), June 1.

45 *The Necessity for Medical Organization. J. N. McCormack.
46 Report of Clinical Cases. M. F. Coomes.
47 *The Sterilization of Suture Material. August Schachner.
48 *Sterility in Women. Lewis S. McMurtry.

Medical Age (Detroit, Mich.), July 25.

49 Foreign Bodies in the Urethra and Bladder. H. E. W. Barnes.
50 Dementia Praecox. Gershom H. Hill.
51 Report of Surgical Cases (Appendicitis, Tubo-ovarian Abscess, Etc.) Wm. H. Wathen.

Pennsylvania Medical Journal (Pittsburg), July.

52 Tubercular Peritonitis in Women. F. F. Simpson.
53 Anatomy of Hanging. Edmund W. Holmes.
54 Diagnosis and Treatment of Incipient Pulmonary Tuberculosis. W. T. English.
55 *How Should the Practice of Medicine be Legally Defined? Henry Beates, Jr.
56 An Address on Hydrophobia. A. Leteve.
57 Smallpox—Its Differential Diagnosis from Other Diseases. J. J. Coffman.
58 Chloretone as an Hypnotic and Local Anesthetic. E. M. Houghton.

The Clinical Review (Chicago), August.

59 Hepatic Cirrhosis; Congenital Idiocy; Sporadic Cretinism. Isaac A. Abt.
60 Clinical Lectures upon the Etiology, Pathology, Diagnosis and Treatment of Tumors. A. H. Levings.

Archives of Otology (N. Y.), June.

61 A Case of Cerebellar Abscess; Operation; Recovery. W. G. Richards.
62 *Functional Significance of the Round Window. A. Frutiger.
63 *Carcinoma of the Ear. Leopold Treitel.
64 *Adenoid Operation on the Pendant Head Under General Anesthesia. P. Rudloff.
65 *Tympanic Vertigo Due to Obstruction Within the Eustachian Tube. Wm. P. Brandegee.
66 A Correlation of One Hundred Successive Mastoid Operations. Edwin W. Pyle.
67 Empyema of the Right Maxillary, Ethmoidal, and Sphenoidal Sinuses with Sudden Blindness of the Left Eye. Operation; Recovery of Sight. T. H. Halsted.
68 A Case of Tuberculosis of the Ear, with Autopsy. Henry L. Swain.

Woman's Medical Journal (Toledo, Ohio), June.

69 Health Fads of To-day. Grace P. Murray.
70 A Case of Sporadic Cretinism. Emma Warner Demaree.

American Journal of the Medical Sciences (Philadelphia), August.

71 *Anesthetics in Heart Disease. John M. T. Finney.
72 *Cardiac Accidents After Anesthetization. Alfred Stengel.
73 *Pre-existing Heart Disease in Reference to Surgical Operations. William J. Mayo.
74 *The Safest Anesthetic to Use in Organic Diseases of the Heart and Vessels. H. A. Hare.
75 *Some Conditions Other than Aortic Aneurysm Which Determine the Occurrence of the Tracheal Tug. Henry Sewall.
76 *Primary Sarcoma of the Thyroid Gland. August J. Lartigau.
77 Splenic-Myelogenous Leukemia, with Pulmonary, Laryngeal and Faucial Tuberculosis. Arnold Sturmdorf.
78 A Case of Cervical and Bulbar Tabes, with Necropsy. Solomon Solis-Cohen and Wm. G. Spiller.
79 Some Observations on Typhoid Fever Complicated by Croupous Pneumonia, with Reports of Four Fatal Cases. Henry M. Fisher.

Medical and Surgical Monitor (Indianapolis, Ind.), July 15.

80 On Professional Practice and Morals in Relation to Life Insurance Work. W. M. Vinnedge.
81 Case Reports—An Operation for Closure of the Defect in Double Hare-lip, with Absence of the Inter-maxillary Bone. Duehrssen's Operation in Eclampsia Gravidarum. J. Rilus Eastman.
82 Fibroid Tumors of the Uterus. Frank C. Ferguson.
83 The Evolution of Surgery. Joseph Eastman.

Archives of Ophthalmology (New Rochelle, N. Y.), July.

84 A Case of Favus of the Upper Lid. Arthur Gloor.
85 *Experimental Investigations on the Pathogenesis of Choked Disc. A Merz.
86 A Choroidal Sarcoma Producing Rupture of the Cornea in an Unusual Manner. Frederick Herman Verhoeff and Fred Maurice Spalding.
87 Report of a Case of Pulsating Exophthalmos. E. Oliver Belt.
88 *The Sterilization and Care of Instruments. Walter B. Lancaster.
89 *On Optic Nerve Atrophy Associated with Cranial Deformity. Harry Friedenwald.
90 Clinical Contributions. Herpes Zoster Ophthalmicus Resulting in Loss of the Eye. Double Suppurative Irido-choroiditis in Association with Purpara Hemorrhagica. Robert L. Randolph.
91 On the Injection of Sterile Salt Solution into Collapsed Eyeballs. Report of Two Cases. Elmer G. Starr.

Vermont Medical Monthly (Burlington), July 25.

92 The Influence of the Bacillus in Pulmonary Tuberculosis. Hubbard W Mitchell.

Interstate Medical Journal (St. Louis), July.

93 An Experimental Study of Antiperistalsis. Richard Muehsam.
94 *Oral Indications of Physical Conditions. Carl Theodor Gramm.
95 Clinical Observations Regarding the Action of Quinin Eosolate in Malaria. A. G. Cippiani.
96 Hydragogin in Dropsy. E. Tutschulte.

Iowa Medical Journal (Des Moines), July 15.

97 Infection Through Food. W. B. LaFrance.
98 Mastoid Disease, Double, Following Middle Ear Disease, Resulting from an Acute Infectious Disease; Operation; Complete Recovery; General Considerations. C. A. Boice.

New York State Journal of Medicine (N. Y.), August.

99 *Cocainism. T. D. Crothers.
100 *The Diagnosis of Leukemia from the Standpoint of the Blood Changes. C. Y. White.
101 *The Treatment of Pulmonary Tuberculosis, with an Additional Note on Climate. C. G. Campbell.
102 *The Present Status of Jonnesco's Operation. Marcell Hartwig.
103 *The Technique of Bloodless Work. Robert H. M. Dawbarn.
104 *The Pathology, Diagnosis, Special Prophylaxis and Treatment of Tuberculosis of the Middle Ear. Seymour Oppenheimer.
105 *Ophthalmia Neonatorum: Its Pathology, Prophylaxis and Treatment. John E. Weeks.

International Journal of Surgery (N. Y.), August.

106 Nose and Throat Work for the General Practitioner. (Continued.) G. L. Richards.
107 Some Surgical Emergencies. W. D. Williamson.
108 *Surgical Introspection. H. W. Chapman.
109 Remarks on Appendicitis with Especial Reference to the Technique of the Operation. J. J. McAdam.
110 *Some Views on Curettement of the Uterus from the Standpoint of a General Practitioner. E. D. Gardner.
111 Regional Minor Surgery. (Continued.) George G. Van Schaick.
112 Post-nasal Tumor of Enormous Size—Its Removal with the Galvano-cautery Snare. F. C. Drenning.
113 Recollections of the First Operation Performed Under Anesthesia. G. M. Angell.

The Laryngoscope (St. Louis), July.

114 *The Nose and Throat in the History of Medicine. Jonathan Wright.
115 *Serous Diseases of the Maxillary Antrum with a Report of Two Cases. W. E. Casselberry.
116 *Tonsillotomy Rash. Wyatt Wingrave.
117 Report of a Case of Malignant Disease of the Tonsil. Hal Foster.
118 A Case of Stenosis of the Larynx Following Fractures; Operation, Recovery. Arthur W. Watson.
119 *Early Treatment of Mastoiditis. Charles W. Richardson.
120 *The Production of Local Anesthesia in the Ear. Homer Dupuy.
121 Clinical Notes on Adrenalin. Norton L. Wilson.
122 A New Cutting Forceps for Operating in the Post-nasal Space. William F. Cleveager.

Southern Illinois Journal of Medicine and Surgery (Metropolis), July.

123 Some Therapeutic Indications for Salol. C. E. Tucker.
124 Our Successes and Our Failures. R. H. Jacobs.
125 Holocain Hydrochlorid. David T. Kyner.

Pacific Medical Journal (San Francisco), July.

126 When Fortune Smiles. Antrim Edgar Osborne.
127 *Prevention and Cure of Consumption. Louis Barkan.
128 Some General Observations as to the Origin of Tuberculosis. E. H. Smith.
129 Diphtheria and Its Treatment. G. W. Mallery.
130 *Circumcision. George I. Bluhm.
131 Varieties of Cholesteatoma. J. Holinger.

Southern Medical Journal (La Grange, N. C.), July.

132 The Conservative Treatment of the Uterus. John Thames.
133 Therapeutics of Small Doses. James H. Gray.

Southern California Practitioner (Los Angeles), July.

134 *Sub-conjunctival Salt Injections in Diseases of the Inner Eye. Adolf Kraemer.
135 *Pneumonia. D. B. Van Slyke.
136 Infant Feeding. George Deacon.
137 Steps in the Prevention of the Spread of Tuberculosis. F. M. Pottenger.

Therapeutic Gazette (Detroit, Mich.), July 15.

138 The Action of Antitoxin. Joseph McFarland.
139 The Treatment of Diphtheria Other than with Antitoxin. J. P. Crozer Griffith.
140 The Present Aspect of the Antitoxin Treatment of Diphtheria. J. Dutton Steele.
141 A Case of Tea-intoxication with Spinal Symptoms. Alfred Gordon.
142 *Hepatic Inadequacy and Its Relation to Irregular Gout with Special Reference to Treatment. I. Burney Yeo.

Texas Medical Journal (Austin), July.

143 On Axis-traction Forceps. William Keiller.

American Journal of Surgery and Gynecology (St. Louis), July.

144 A New Method of Performing Hysterectomy. Byron Robinson.
145 *The Present Status of the Bottini Operation in the Treatment of Prostatic Hypertrophy. Leonard Freeman.
146 Severe Hemorrhage and Sepsis Following Nasal Operation in a "Bleeder." William Cheatham.
147 Vaginal Drainage in Non-operative Cases. C. M. Fulton.
148 Maggots in the Nose. L. Brannon.
149 *Myomectomy of Nine Myomas During Pregnancy and Delivery at Term. John Duncan Emmet.
150 Wandering Kidney. (Concluded.) Emory Lanphear.
151 A Case of Abdominal Aneurysm Treated by Abdominal Section and Introduction of Wire. F. W. Parham.
152 Neurasthenia: Its Relation to Diseases of Women, and Its Treatment. L. H. Schwerin.

Toledo Medical and Surgical Reporter, August.

153 Practical Remarks on Diseases of the Ear. F. J. Dietz.
154 How to Find the Fissures of the Brain, Make Trap-door Operations, Etc. Allen DeVilbiss.

Charlotte Medical Journal, July.

155 Rheumatism. W. P. Whitington.
156 Acromegalia. T. L. Cornwell.
157 The "Knox Improved Monk's" Needle Holder. A. W. Knox.
158 Some Considerations on Specific Urethritis—Its Complications and Treatment in the Male. F. B. Cullens.
159 Ethical Side of the Medical Profession. D. W. Sherrod.

AMERICAN.

1.—See THE JOURNAL of July 27, p. 259.

3.—Ibid., p. 327.

3. **Blood Examination.**—The scope of practical blood examination for the determination of anemia; its severity and type; the existence of leucocytosis and its extent, including the diagnosis of the conditions of myelogenic and lymphatic leukemia, with determination of the presence or absence of blood parasites; the diagnosis of malaria, filariasis and relapsing fever; the determination of the existence of serum reactions such as the Widal test and the presence in the blood also of bacterial organisms, that is, of septicemia, are first stated briefly by Hewes. Next, the various methods of employing the test for these conditions are critically described. The paper will be found useful for reference.

5. **Measurements of Girls.**—The results obtained by MacDonald in measurements of girls seem to prove that children of the non-laboring class are superior in physique and have a greater acuteness of sensibility. Girls in private schools are less sensitive to locality on the skin and more sensitive to pain before than after puberty. Among the average women he finds the blondes inferior in all measurements and less sensitive to pain. The first-born in both men and women are more sensitive to pain than the second, and the second less sensitive than the later born. Investigation of larger numbers are, however, necessary. The dolichocephalic in both sexes are less sensitive to pain than the brachycephalic. University women are more sensitive than university men. It seems that in the female sex there is greater acuteness of sensibility than in the male.

6. **Hemolysis.**—Meltzer's article is largely a review of the literature and he also adds his own experiments. He has tested the agglutinating and hemolytic power of normal bullock serum and the effect of its stay in the peritoneal cavity. His chief conclusions are stated as follows: Normal and immunizing serums lose their hemolytic power during a prolonged stay in the peritoneal cavity. The loss is due to the disappearance of the toxic component, the complement of Ehrlich, or the alexin of Bordet and Buchner. The disappearance means absorption, and the disappearance of the complement in much greater proportion than the balance of the fluid means elective absorption. However, as this elective absorption takes place in the cadaver, it can not be a vital phenomenon, and he thinks more probably it has its explanation in some laws of osmosis or inhibition.

7. **Spinal Lesions.**—The diagnosis of spinal lesions is discussed by Punton, who summarizes the various steps in the diagnosis as follows: 1. Determine whether the symptoms are due to spinal lesions by reference to your knowledge of function of its several parts, thus excluding those symptoms due to cerebral or peripheral lesions. 2. Next determine whether the symptoms are due to organic or functional disease, or are caused by malingering. This usually can be done by careful methodical examination of all parts involved, together with a study of the mode of onset of the symptoms, their duration, nature and character and all the other facts connected with the family, personal, and clinical history of the case. 3. Next determine the exact location of the lesion, whether extra-medullary, intra-medullary, systemic or non-systemic. This requires ability to interpret the nature and character of symptoms produced in conjunction with other causes, and the known liability of certain structures to such lesions. 4. When all these questions are correctly answered, we are then prepared to make our diagnoses and base on them the prognosis and treatment.

9. **Surgery in the Insane.**—Mayo gives his experience with surgical work in the St. Peter and Rochester hospitals, of Minnesota. He classes the indications into three general groups: 1. Those in which surgery relieves the physical ailment without reference to mental conditions. 2. Operations for the purpose of relieving mental symptoms. 3. Operations for the public welfare. As regards the first he thinks there is no question as to their value, and mentions a number of conditions in which he has found utility in operation; thus, hernia, which, owing to their habits, patients are often unable to have relieved by ordinary mechanical methods, has been treated by operation. Also within the last four years considerable has been done for the relief of prostatic hypertrophy, gall-stones, cataracts, etc. In the second group, surgery has but a limited sphere. In epileptics there is but little prospect of good after two years of disease, and few epileptics are admitted to hospitals for the insane who have not suffered from the disease longer than this. Nevertheless, amelioration has been produced in two cases and he thinks that in some cases it may not be only warranted, but advisable. The greatest claims have been made for gynecologic work. The insane woman should be relieved, not because of her mental condition, but on general principles, but there is little reason for hoping for more than the betterment of insanity. He has seen few, if any, cures brought about in this way, but much relief in suitable cases. Operations for the public welfare are of questionable propriety, and would not likely be sanctioned at the present time. Mayo, however, endorses Brower and Ochsner's suggestion of unsexing male patients by vasectomy, which is a safe, and may be made a painless operation. An analogous operation in women would be more dangerous and not permissible. Out of a total of 60 females and 40 males operated on for all causes, 16 per cent. of the women and 12 per cent. of the men were mentally improved about as we would expect from the physical relief afforded. As regards their physical condition nearly all were improved. Only one cure from insanity was reported. In conclusion, he says that the insane have from the surgical standpoint the same rights as the sane, no more, no less.

10. **Tincture of Iodin in Infected Wounds.**—After first noticing the experiments and studies of Schimmelbusch and others as regards the treatment of infected wounds, Beck gives his experience with the use of tincture of iodin, which he thinks possesses a permeating power to a certain extent antiseptic. The tincture was applied once over the carefully dried wound surface. Fifteen minutes afterward examination of the tissues showed evidence of permeation, and no cultures could be obtained from such areas. No general disturbance was observed, though in two cases iodin reaction was found in the urine three or four hours after the application. All the cases took a favorable course.

12. **Nervous Diseases.**—The address of Sinkler calls attention to the importance of greater familiarity of the physician with some of the leading nervous disorders, and to the advances that have been made in their diagnosis and treatment. He thinks a special course in neurology should be given and a chair of clinical neurology established in every medical school.

13. **Yellow Fever.**—The view of Reed, Carroll, and others as to the part the mosquito plays in the production of yellow

fever is combated by Purnell, who adduces numerous cases which he thinks tend to show the possibility of infection by other means, fomites, etc. He admits that his views will be criticized as not being exact enough, but his conviction is that the mosquito has been and will continue to be only a limited factor in the spread of yellow fever.

17. **Appendicitis.**—The danger of delaying operations for appendicitis is emphasized by Lobingier, who cites a number of cases where intestinal obstruction, peritonitis, septic embolism, gangrene, venous thrombosis, metastatic abscess, etc., followed delay in operation. He thinks the evidence on record appeals for early diagnosis and treatment, as opposed to procrastination and delay.

18. **Gastro-Enterostomy.**—The "vicious circle" here mentioned consists in the contents of the stomach passing in the afferent limb of the jejunum, that is to the duodenum instead of following their proper course through the efferent portion of the jejunum into the ilium, causing regurgitation into the stomach, distention, pain, hiccoughing and death by exhaustion. He practiced gastro-enterostomy over ten years without meeting a case of this kind, when two in quick succession aroused him to appreciate the danger.

19. **Spinal Cocainization.**—Morton has operated on a large number of cases by spinal cocainization and has collected reports of cases from other physicians. He thinks there can be little doubt as to the advantage of the method in cases where general anesthesia is contra-indicated on account of cardiac or renal disease. Since reporting the above cases he has made 61 more operations by this method, 15 of which were operations on the upper extremities or head with complete analgesia.

22. **Europhen.**—Thomas has employed europhen, which is produced by the action of iodin on isobutylorthocresol in a solution of potassium iodid. He finds it an antiseptic preparation which depends not alone on the freeing of nascent iodin, but also on the liberation of its cresol. He uses it in the dressing of wounds and internally in many cases where iodin is indicated, such as in syphilis, and as an intestinal antiseptic in typhoid fever, where he has found it efficient. He not only uses it where potassium iodid is not well borne, but also as an alternative with it in these cases. He had tried it also in tuberculosis with good results. From his experience he assumes that we have in this drug an iodin compound fully as efficacious as iodin in surgery and internally the most reliable and satisfactory means of giving iodin.

23.—See THE JOURNAL of August 3, p. 327.

24.—See editorial in THE JOURNAL of August 10, p. 390.

25. **Cutaneous Cancer.**—While internal cancer rarely originates from benign growths, this is very commonly found to be the case in cutaneous cancer, as is shown by the frequency of labial epithelioma. Alger calls attention to this fact. He does not seem to favor the parasitic theory and rather holds that it may be a special derangement of the reproductive activity of the higher cells. All cancers have certain clinical features in common; there is a hardness beyond that of the surrounding tissue and a tendency to ulceration, characterized by hard, waxy, distinct margins with dilated blood vessels. Error in diagnosis, which is often difficult, may be due to sarcoma, which is rare, develops more rapidly, has secondary deposits earlier, affects younger persons as a rule, and has a comparatively slight tendency to ulceration. Tuberculosis, besides its earlier occurrence, has none of the indurations of cancer. Syphilis, which causes the most errors, develops much faster; while indurated it has none of the characteristic hardness of epithelioma and ulcerates much sooner; has a more profuse discharge and a tendency to heal on one side while advancing on the other. In many cases of cutaneous cancer the disease might hardly be considered malignant were it not for the possibility of metastasis. Dissemination is governed by two factors: 1. Proximity of lymphatics and vessels. 2. Looseness of structure on the part of the cancer, leading to easy detachment of the fragments. Fortunately in cutaneous cancer dissemination is comparatively rare, at least in the superficial varieties. As regards treatment, Alger advises against any operation that is not thorough and cancers in old persons and superficial epithelioma are much less in need of active interference, because they are commonly indolent. Growths in the vicinity of the active lymphatics should be removed at once. Great care should be taken as regards instrumental interference. The danger from dissemination by instruments renders the use of infiltration anesthesia dangerous. Where lymphatic involvement has not yet taken place and is not to be considered, caustics and especially arsenic are suggested. In well-marked cancer where dissemination has taken place, amputation will often prove to be a conservative measure. The inoperable cases must be treated palliatively, according to their individual needs.

26. **The Electro-Bougie in the Eustachian Tube.**—The use of this instrument is discussed by Harris, who gives his results and feels he is warranted in offering the following conclusions: 1. The electro-bougie has a place in our aural-therapy, though a less important one than was at first supposed. 2. It should be used after, and not before, other methods of treatment. 3. It will be most liable to fail if any associated internal ear disease is present. 4. Its results are not always permanent—the stricture may re-form—we may hope rather for a diminution than a disappearance of the tinnitus. Two cases totally relieved out of 25. Two cases partially relieved. 5. Its use is not without danger, and a proper knowledge of the anatomy of the parts and of the technique is essential. 6. It is a question whether the process is a true electrolytic one, or if in many instances the obstruction is a true fibrous stricture.

27. **Native Medical Practice in the Philippines.**—Harvey's article is an interesting one on the medical practice of the natives of the Philippines, especially the Mindanaoan Moros, but it is too full of details to be abstracted.

28. **Flagellated Malarial Parasite.**—Moore from his study of the plasmodium in the human blood, believes that he has observed the flagella or microgametes detach themselves from the hyaline bodies. He has never yet been able to follow them to the granular or female body, though he has several times seen them detached. He believes that they are formed within the hyaline bodies and find their way outside.

30. **Digitalis.**—Ingram finds digitalis among the most valuable drugs for certain cardiac irregularities not due to indigestion, which is aggravated by the use of this drug. The functional difficulties met with in neurotic subjects may be, but are not always benefited, and overstrain from exertion without demonstrable lesion is often much relieved. The dilatation of the right heart accompanied by cardiac disease may be, but is usually not much improved by the drug. Mitral insufficiency is one of the diseases in which it is most useful, but the more it varies from the edematous type, the less good will digitalis do. Cases where there is much pain and depression and but little regurgitation are not so often benefited, though many are improved. Sometimes vomiting caused by digitalis prohibits its use. In mitral stenosis it is of great advantage to prolong the diastole and in this way digitalis helps; both stenosis and insufficiency of the tricuspid valves may be benefited in the same way as in the mitral valve, but in most cases it does less good in diseases of the right side of the heart. Aortic insufficiency is a condition in which digitalis is often harmful. It should be given only when the heart is very rapid or there is evidence that there is not much regurgitation or where there are other reasons, such as coincident presence of aortic obstruction, for wishing to strengthen and regulate the contraction. The dose should be small and the effects carefully watched. Sometimes in aortic stenosis it may be advisable to increase the force of the beat, but most cases do not require drugs, for the cardiac hypertrophy itself is sufficient.

32. **Cranial Injuries in the New-Born.**—The possibility of accident and secondary results from injury of the cranium during birth are reviewed by Currier, who holds that in every case where the labor has been severe and protracted, the

cranium should be carefully examined to detect a possible fissure, fracture or depression of the bone. Treatment should be instituted as soon as possible after birth. It should be much the same as would be the treatment at later periods of life, a similar regard being paid to details.

33. **Gastric Secretion in Rheumatism.**—Little has been written regarding the subject of gastric secretion in chronic rheumatism and rheumatoid arthritis, and Murdoch gives the results of examinations in 6 cases—5 of chronic rheumatism and 1 of rheumatoid arthritis. In these cases he tested for this secretion with the Günzburg and Töpfer methods in each case and found varying conditions. He thinks that the diet should be prescribed in view of the condition of the joint, but in each case as required to suit the existing state of the gastric secretions.

34. **Ethyl Chlorid.**—After alluding to an earlier article published in the *Medical Record* advocating the use of the drug, Ware gives his opinion as to the value of ethyl chlorid as an anesthetic. He finds it less expensive, more convenient, and less formidable in its effects than nitrous oxid. The agent, however, is of service only in minor operations and as a preliminary to cut short the agonies of the earlier stages of chloroform and ether anesthesia. The intelligent application of ethyl chlorid will demonstrate it a useful and valuable agent in minor surgery in the hands of the general practitioner, largely supplanting laughing gas.

35. **Tri-Chlor-Tertiary-Butyl-Alcohol.**—The use of this drug which was proposed by Aldrich and Houghton in THE JOURNAL in 1899, is again discussed by the latter. Its antiseptic and hypnotic effects are both noted. From what has been learned, he believes he is warranted in drawing the conclusion that owing to its moderate antiseptic, local anesthetic and hypnotic properties, its apparent harmlessness to animal tissue when brought into direct contact with it or when absorbed and distributed to various parts of the body by the circulation, it bids fair to have a wide field of usefulness. One of the most important points to be determined is its dosage, which needs yet to be worked out. A case is referred to by him where he has found it of benefit when employed as a local anesthetic. As a surgical dressing in the field, it is being tested by army surgeons. It has been given and recommended by various individuals, Donald, West, Baumeister, and others, and he has had reports from physicians who employ the drug in insane asylums. It would seem that it can not be employed with entire safety in motor exhaustion of general paresis, though other types of mental defect appear generally to be benefited.

37.—See abstract in THE JOURNAL, XXXVI, p. 1493.

38. **Gastro-Enteric Infection in Infants.**—The treatment of this condition varies somewhat according to the nature of the poison and idiosyncrasy of the individual and is stated briefly by Zahorsky as follows: "1. Take infant from a milk diet. 2. Administer a purgative. 3. Give some cereal decoction for one to three days. 4. Prescribe a mild antiseptic mixture which will do no harm to the patient. 5. Treat the dangerous symptoms. 6. Gradually restore a normal diet, by adding small quantities of meat broth, whey, or human milk to the cereal mixture. 7. Cow's milk should then be given in very small quantities added to the cereal decoction. 8. The amount of food should be apportioned to the power of the digestive apparatus. 9. The majority of cases get well rapidly, the persistent cases require careful dieting and nursing rather than medication."

40. **Growing Pains.**—Growing pains of children are considered by Hale as evidences of rheumatism under different conditions from its existence in adult life and attended with complications secondary to the disease. Salicylic acid can not be unreservedly employed in children, as its toxic effects are more marked with them, and he reports cases where he has used aspirin in its stead with good results.

45.—See abstract in THE JOURNAL, XXXVI, p. 1727.

47.—Ibid., p. 1726.

48. **Sterility in Women.**—McMurtry finds that sterility may result from disease involving any portion of the genital organs, from the pelvic peritoneum to the vulva; the most potent cause originating in changes following inflammation. Hence for the most part the prevention and treatment of sterility is synonymous with the treatment and the prevention of pelvic inflammation. He calls special attention to the evils of the practice of frequent vaginal douching in healthy women.

55. See THE JOURNAL, June 15, p. 1728.

62. **Functional Significance of the Round Window.**—The summary of Frutiger's paper is given as follows: "1. Whenever the oval window is greatly altered pathologically, and the lower-tone limit much reduced, hearing for bass tones can be improved by using tampons to the round window membrane. This membrane, therefore, seems also to conduct sound from the tympanum to the labyrinth; under normal conditions, however, only such higher tones, perhaps from the small octave (inclusive) upwards. 2. The round window membrane serves, normally, but chiefly in conjunction with the two aqueducts, to regulate the variations in tension of the labyrinthine fluids, namely: 1. In case of wave movements produced in the labyrinthine fluids by tones passing through the chain of ossicles. 2. In sudden shock produced against the chain of bones by direct or indirect force."

63. **Carcinoma of the Ear.**—The infrequency of aural carcinoma is offered as a justification of the report of the cases here given, and their discussion. Treitel considers that suppuration in the auditory canal leads to susceptibility to epithelioma just as the lips become susceptible in pipe smokers, and eczema also favors the condition. The predilection of malignant growths for parts where the skin and mucous membrane meet would further strengthen the belief that the lower end of the ear is specially vulnerable. The chance of benign tumors becoming malignant is supported by the occurrence of aural cancer, but the obscurity of the pathology of the condition is very great at present. He calls attention to the limits of the tumors by the dura in these cases. The early paralysis of the recurrent laryngeal nerve was probably due to enlarged glands. The condition of the blood vessels and almost complete obliteration of the sigmoid sinus and the abrupt termination of the carotid at the base of the skull must have developed very slowly, as there was no congestion to indicate rapid obstruction. The prognosis depends upon the early recognition of the condition and early radical operation.

64. **Adenoid Operation.**—Rudloff has followed Rose's suggestion in adenoid operation of having the head pendent to prevent blood flowing into the pharynx. He calls attention to an accident which occurred in one case, viz., wounding of the carotid artery. When the adenoma arises in the Rosenmüller's fossa injury to the lateral walls may result in wounding of the carotid, hence the importance of special care in the manipulation of instruments in this position.

65. **Tympanic Vertigo.**—For the relief of tympanic vertigo, due to Eustachian obstruction, Brandegee finds nothing so satisfactory as electrolysis—the introduction of the electric bougie into the tube. Its advantages as given by him are: 1. Ease in manipulation. 2. Minimum amount of pain to the patient. 3. Minimum amount of trauma to parts involved. 4. Thorough destruction of the stricture or occlusion. 5. The force necessary is only sufficient to insure good contact for the current. 6. The parts of the apparatus which come in contact with the tube can be readily rendered sterile. When the mouth of the tube is well anesthetized with cocain, which is easy generally, the operator can then slowly and almost painlessly pass through any stenosis. It should be understood, however, that, in this, electrolysis, not cauterization, is desired. To produce this effect only a mild current with comparatively low voltage should be used. Experience has shown that it is not well to use the electric bougie too frequently. No excessive force should be employed and inflation by catheterization should not be attempted for at least forty-eight hours after treatment on the account of the slight reaction and for fear of emphysema. It is often quite necessary to bougie several times before we have a perfectly simple and patent tube, and finally it is essential

that the catheter and bougie should be sterilized by boiling. After the patency of the tube has been established, air and vapor massage by the catheter is indicated, while attention should be given to the adjacent cavities, local surgical procedures being adopted when necessary. Six cases are reported of relief of obstructive tympanic vertigo from the Eustachian tube.

71. **Anesthetics in Heart Disease.**—After reviewing the possibility of accidents occurring during or after anesthesia from chloroform, ether, etc., Finney finds that as regards ether, the contraindications are rather respiratory than cardiac, while chloroform is more dangerous in all cases of weak heart. From a study of 142 cases, he thinks that in myocardial conditions only do anesthetics exert any markedly bad effects. In valvular disease their influence is very slight, though appreciable, and in functional diseases insignificant. He emphasizes the importance of the part taken by the anesthetizer, which is in some cases more important than that of the operator himself, and the need of a thoroughly competent corps of anesthetists in our hospitals.

72. **Cardiac Accidents After Anesthetization.**—Stengel offers tentatively the following conclusions: In all cases of cardiac disturbance after operation it is difficult to determine whether the result is due to the anesthetic or to the operation. In many cases of recognized cardiac disease ether has a temporary beneficial effect on the cardiac condition, but it is probable that its secondary effect may be unfavorable, the symptoms occurring after a lapse of several days. It is important to recognize that certain results following operations, such as basal pneumonia, gastro-duodenal disturbances, and especially embolism, are, in reality, the results of the weakened state of the heart, and may, therefore, owe their development to anesthetization or the shock of the operation. The bad effects of anesthetization, he believes, are due to disturbances of the nervous mechanism or the essential muscular automaticity, rather than to organic changes in the myocardium, endocardium or pericardium.

73. **Heart Disease and Surgery.**—Mayo finds that, between the ages of 10 and 40 valvular diseases are generally well compensated, and if the heart's action is easy and circulation well carried out, the operative risk is not great. If there is failing compensation and signs of marked dilatation, only operations of great urgency would be undertaken without preparatory treatment. After 40, valvular lesions are usually associated with some degree of myocardial change, a condition which the surgeon has to fear.

74. **Safest Anesthetics in Heart Disease.**—Hare finds ether the safest, if properly administered, excepting in vascular disease where in grave conditions it is generally contraindicated and also in atheromatous disease, and in the high arterial tension due to vascular changes. He does not think it strongly contraindicated in Bright's disease, if the anesthetist is impressed with the fact that the kidneys are affected and necessary precautions are used. The use of chloroform in the presence of myocardial change is very dangerous, and nitrous oxid is strongly contraindicated in vascular degeneration. Intraspinal injection, he thinks, will soon be regarded as a medical curiosity, as it has not the wide scope of usefulness with which it was heralded, and will be shortly neglected. The anesthesia is often blamed unjustly. He believes that more people die straining at stool or going up stairs when suffering from heart disease than from the effects of anesthesia.

75. **The Tracheal Tug.**—Sewall has investigated the subject of the tracheal tug as a sign of aortic aneurysm, and thinks it an untrustworthy indication. In the majority of cases it is associated with, and dependent on, adhesions of the left pleura. The diminished extensibility of the lungs tends to produce heart phenomena, and the tug is most pronounced when the conditions are combined. He also finds that in the normal individual the descent of the heart with inspiration movement of the diaphragm may so press the aortic arch upon the left bronchus as to impart to the trachea the aortic pulse, recognizable at the larynx, as a palpable tug of greater or less distinctness.

76. **Sarcoma of the Thyroid.**—Lartigau finds that primary sarcoma of the thyroid is rare, but probably more common than is shown by statistics. It is less frequent than primary carcinoma of the gland. It is most commonly associated with goiter, developing in persons between 40 and 60 years of age, which show a higher percentage of previous goiter than younger individuals. Goiter associated with sarcoma of the thyroid is more common in women than in men. Sarcoma of the thyroid occurs oftener in late than in early life, with greatest frequency between the ages of 40 and 60. Sex is probably unimportant. The primary tumor generally originates in the right lobe, though this seems to be more frequent in men than in women. The clinical course is usually very acute and involvement by pressure of the entire growth on trachea or larynx is common. Metastasis occurs through the blood or lymphatic channels or both. Round and spindle or mixed-cell sarcomas are most common. Angiosarcomata are not rare.

85. **Choked Disc.**—From his studies and experiments, Merz draws the following conclusions: 1. Increased intracranial tension alone is sufficient to produce choked disc, and it is only necessary that this tension should be maintained uninterruptedly for some time. Transient increased tension even when often repeated leads only to venous hyperemia and arterial anemia of the fundus. 2. In order to produce choked disc the tension needs to be increased but slightly, 8 to 15 mm. of mercury or less. 3. The eye of the dog and of the rabbit react differently to intracranial tension, while in the former the choked disc is rapidly produced it can rarely, in the latter, be brought about at all, on account of the deep physiologic cup and the relation of the vessels to the optic nerve. This, Merz holds, possibly accounts for the diverse results of different experimenters. 4. The first clinical sign of increased intracranial tension seems to be the change in retinal circulation, dilatation of the veins and contraction of the arteries. 5. The nearer to the eye the vessels perforate the sheath of the nerve, the earlier the changes in retinal circulation appear. 6. In the production of experimental choked disc several succeeding factors are probably important: First, the increased tension leads to compression of the venous sinuses of the brain, disturbing the venous circulation in the eye. Then is added the stasis of liquid in the subvaginal space and the compression of the vessels in their course from their passage through the nerve sheath to the papilla. Finally, the nerve itself is compressed by disturbed circulation in its own lymphatics, with the latter begins the edema of the nerve fibers, which in turn increases the compression of the vessels. Such disturbances in the blood and lymphatic circulation when continued for a certain time lead to inflammatory manifestations in the nerve, its sheaths and papilla. 7. In view of the similarity in anatomical construction between the eye of the dog and that of man, the results of his experiments can with considerable reason be supposed to hold good in man also.

88. **Sterilization and Care of Instruments.**—Lancaster finds from his experiments and tests that boiling in alkaline solution, if properly done, does not rust instruments, but that soaking with any solution of boracic acid, salt or even alcohol does hurt them, and, so far as he can judge, is entirely unnecessary. As regards the preservation of instruments, he believes that putting them away dry and clean is more important than the kind of case, and that the velvet case for the most delicate knives is less objectionable than one of metal or wood. Coating with oil, which is very easily removed by boiling soda, is a sure preventive of rust. Droppers should be supplied for every patient and not used more than once without sterilizing. Syringes and electric instruments, both cauteries and magnets, should be tested weekly.

89. **Optic Nerve Atrophy.**—Friedenwald reports cases associated with cranial deformities and reviews other cases which he has been able to find in the literature. He thinks that while the number of cases is small, the constancy of symptoms found associated with variously deformed skulls and especially with the steeple-shaped skulls is due to early neuritis followed by atrophy. He holds the opinion that optic neuritis in this case depends upon increased intracranial

pressure caused by premature synostosis and is therefore similar to that associated with tumors of the brain.

94. **The Mouth as an Index to Disease.**—Gramm calls attention to the symptoms afforded by the mouth as indicating the physical condition of the patient, and especially to three morbid conditions: 1. That form of chronic congestion of the free margins of the gingival followed by parallel white lines of decalcification of decaying teeth, which he thinks is a sign of underlying intestinal indigestion and especially of acid dyscrasia. 2. Persistent caries of the teeth, which he has often seen as a solitary witness to altered metabolism. It may occur in pregnancy; he has often seen it in young girls between the ages of 12 and 15, and it calls for general prophylactic treatment. Lastly, he refers to the neuro-atrophic condition called Rigg's disease, which usually calls for a general physical examination. Such examinations have led to the discovery of unsuspected cases of incipient diabetes. All nutritive diseases are prone to betray themselves in the irritation of the dental periosteum.

99.—See abstract in THE JOURNAL, XXXV, p. 1104.

100.—Ibid., p. 1105.

101.—Ibid., p. 1171.

102.—Ibid.

103.—This article appeared in THE JOURNAL, XXXVI, p. 357.

104.—See abstract in THE JOURNAL, XXXV, p. 1172.

105.—Ibid., p. 1104.

108.—This article has appeared elsewhere. See THE JOURNAL, XXXVI, title 72, p. 1586.

110.—Ibid., title 74, p. 1206.

114. **The Nose and Throat in Medicine.**—Wright's article, as stated editorially, is the beginning of a series of papers which will be published in succeeding numbers. This first installment is full of interest and shows a wide range of reading.

115. **Serous Disease of the Antrum.**—Casselberry calls attention to the less noticed condition of serous or mucoserous accumulation in the antrum and reports cases. It may be one of the sequelæ of chronic catarrhal sinusitis, and he reviews the literature to some extent. One of his cases was acute sinusitis with retained muco-serous secretion. The other was of chronic serous disease. The diagnosis of these cases can only be based upon aspiration, the transillumination test is indecisive. In both his cases the light transmission was impaired, not forming a distinct shadow. This, together with nasal polypus, degeneration of the middle turbinated body, ill-defined browache, or sense of fulness in the cheek should suggest an exploratory incision. To distinguish a free serous collection from a cyst may be quite impossible, without wide opening, and even then it has been found impossible. Treatment consists in relieving the obstruction to the ostium maxillare and by resection of the enlarged middle turbinate bodies. Removal of the polypi, if cystic, or if recovery does not follow suitable nasal treatment, an opening in the anterior wall of the sinus sufficiently large for palpation would seem to promise good results and forestall the appearance of empyema.

116. **Tonsillotomy Rash.**—Wingrave has found in seven years twenty-six cases of rash following tonsillotomy, usually of the roseolar and erythematous types, affecting the neck, chest and abdomen and sometimes extending to the face and limbs. The earliest appearance was on the day after the operation, the latest on the sixth day; duration from two to five days. It disappears without desquamation, but is sometimes attended with severe itching and may occur at any age. Examination of the blood during the week following the operation of tonsillotomy gives in most cases evidence of increase of mononuclear red corpuscles. He remarks that this leucocytosis, which rarely lasts beyond the tenth day, is hardly surprising after so great a disturbance of lymphoid structures. The removal of tonsils and adenoids affords a very large area for absorption of toxic matter, and the rash should be interpreted either as a toxic result or one of drug intolerance, since most of the patients were taking sodium salicylate and bromid of potash.

119. **Mastoiditis.**—The first and most important indication in the early treatment of mastoiditis, according to Richardson, is an early and free incision of the tympanic membrane, and he thinks too little importance is given to this matter. The second is care of the purulent discharge, and he advises frequent and gentle irrigation with sterile water, but the less meddlesome we are during the first forty-eight hours the better. The fourth important indication is the prevention of infection of the mastoid or arrest when it has occurred. For this he advises the continuous and persistent use of ice in all recent cases when infection of the antrum or cells has taken place. Where there is profuse purulent discharge and sinking of the posterior superior wall of the auditory canal with edema over the mastoid, the condition calls for operative interference at once.

120. **Aural Anesthesia.**—Dupuy gives his experience with the combination of cocain, absolute alcohol and anilin oil in the proportion of 50 parts of the two latter to 5 or 10 parts or more of the first, recommended by Albert Gray, of England, for the production of aural anesthesia. He thinks this solution has a remarkably penetrating power, but the fifty cases reported by him do not bear out the inference that there is an excessive danger of drug poisoning in its use. He calls attention to several points in the method of applying the solution: 1. The instillation of hydrogen dioxid in the meatus is very useful in softening and dislodging the loose epithelial tissue on an inflamed drumhead and affording a better chance for penetration. The second and all-essential point is to fill the external meatus with the solution. To make sure before incision that anesthesia is complete, he thinks it good practice to touch the drumhead at the selected point with the tip of the knife. The most satisfactory preparation in his experience is 20 parts of cocain in the mixture, for producing the anesthesia.

127. **Tuberculosis.**—Barkan recommends the use of permanganate of potassium and salicylic acid in the treatment of phthisis, and reports several cases where this combination appears to be of special value. He considers salicylic acid far superior to quinin in tuberculosis, as not interfering with digestion when given at the proper time and in proper quantity.

130. **Circumcision.**—Bluhm considers circumcision unnecessary from the hygienic, and useless from the preventive standpoint. Physiologically it is the removal of a functionally useful part and mutilation of an organ. From the pathological standpoint it is unjustified; from the humanitarian point of view, it is cruel and ought to be prohibited by law.

134. **Sub-Conjunctival Salt Injections.**—This method, introduced into medical practice about seven years ago by Wellinger, is, according to Kraemer, absolutely safe and only slightly painful if one confines himself to the 2 per cent. solution. The injection should be made as far distant as possible from the cornea in the upper equatorial region. "It is sufficient to perform it by means of a needle of the syringe laid flat on the conjunctiva bulbi and shoved forward so as to make a slight fold with the point and then carefully thrust in, two or three inches [? ? ?] between the sclera and conjunctiva; then the salt solution is slowly injected under the conjunctiva." He has found that in opacity of the vitreous humor, or choroiditic diseases of the fundus resulting from myopia of a higher degree, the injections lead to speedy and good results. Also in cases of beginning detachment of the retina, in combination with confinement to bed, and in cases of retinitis pigmentosa it is of temporary value. He regards the method as an enrichment of the ophthalmic remedies and can recommend it for the above mentioned diseases of the eye.

135. **Pneumonia.**—The measures mentioned as beneficial in pneumonia by Van Slyke are first blood-letting, which he thinks is of decided value in certain cases; the disuse of all depressing agents, blisters, etc., expectorants; the judicious

use of alcohol and hydrotherapy, strychnin, digitalis and opium under proper hygienic precautions. He would begin treatment with a few small doses of calomel followed by a saline. Pain and temperature call for hydrotherapy, and the use of dry cold to the affected parts. As soon as the heart shows signs of weakening, he gives whiskey and strychnin in small doses, gradually increased, and substitutes digitalis for strychnia when there is delirium and cerebral congestion. He gives plenty of water with a liquid and nourishing diet.

142.—See abstract in THE JOURNAL of July 6, p. 70.

145. **Bottini's Operation.**—Freeman claims for this procedure a number of advantages: Great improvement in the vast majority of cases, low mortality, slight suffering on the part of the patient, rapidity of operation and less resistance and fear in the subject operated upon. Most failures occur in old cases with advanced pathologic changes and complications.

149.—This article has appeared elsewhere. See THE JOURNAL of July 13, paragraph 78, p. 146.

FOREIGN.

British Medical Journal, July 27.

Introductory Address Mainly on the Classification of Cases. I. BURNEY YEO, M.D., F.R.C.P.—The author said the objects of treatment by climate in cases of pulmonary tuberculosis seemed to be the following: 1. To arrest catarrhal conditions of the air passages. 2. To improve nervous and circulatory tone. 3. To increase the activity of the digestive functions, and thus stimulate nutrition by promoting the desire and increasing the power to take exercise. 4. To raise the normal tone—by no means an unimportant matter—by affording a clear, bright, and cheerful environment. 5. To diminish by its asepticity bacterial activity. It is a question for consideration whether so-called "open-air treatment, without regard to suitable climatic conditions, will do all this. It should be our object when practicable to place the consumptive patient under conditions and in circumstances where, without risk or injury, he may obtain the most complete and perfect aeration of the lungs possible. If you place a feeble catarrhal patient in the open air in a damp and cold climate, you will risk an increase of the catarrh, and this will diminish pulmonary aeration by blocking up the air-passages. The modern open-air treatment is only "new" in its manner of carrying out this idea of hyperaeration of the diseased lungs, and we must be especially careful in applying it to avoid the risk of aggravating catarrhal conditions. This, I think, has now been fully admitted by some of the most strenuous advocates of open-air treatment *per se*. The recommendation of a long sea voyage as a cure for phthisis doubtless had its origin in the idea of pulmonary hyper-aeration. It was an early form of "open-air" treatment, but with grave drawbacks and risks. It may be interesting to mention that between two and three centuries ago Sydenham seems to have had in his mind also this same idea of hyperaeration of the lungs in the treatment of consumption. * * * Now climatic treatment is essentially open-air treatment; and the appropriate selection of a climate must depend on the suitability of that climate to open air life in the particular cases we may have to deal with.

"It is difficult to establish any precise and rigid classification of the cases best suited to particular places, because in many cases, with a limited idea of local disease, the patients will do well and obtain arrest of the disease in a variety of places with somewhat different climatic conditions. * * * Many chronic stationary cases with fair general health travel about to different winter resorts in successive seasons and appear to benefit more or less in all. Another difficulty in drawing reliable conclusions from statistics is the tendency on the part of certain observers to use somewhat vaguely the terms "incipient phthisis" and "pretuberculous phthisis." I find many practitioners are in the habit of using the term "incipient phthisis" in the sense of "suspected phthisis; in that case it expresses an opinion rather than a fact. If this practice is largely acted upon it must greatly detract from the value of the statistics obtained. It would be better, I venture to suggest, to discard the use of the term "incipient phthisis" and use the more precise term, "early phthisis," instead; and then in the preparation of statistics it should be stated on what observed symptoms and physical signs this diagnosis is founded. The term "pretuberculous" phthisis is, I think, still more objectionable. In estimating the results of any form of treatment these terms, I would suggest should not be used. We are, I suppose, all agreed that early cases with a very limited area of local disease, with little or no fever, with integrity of the digestive functions, and in young and otherwise healthy adults do well and are frequently cured in a variety of climates provided they live a perfectly hygienic, open-air life. They recover probably more speedily in altitude climates than elsewhere.

"*Advanced Chronic Cases.*—The idea that formerly prevailed that a warm, moist and equable climate, was the best for consumptives had a certain foundation in the suitability of such climates to the advanced catarrhal cases. There was little idea of cure associated with these climates, because consumption was then regarded as incurable, but it was thought that they prolonged life, and made the slow process of dying less painful. The quality of equability in a climate was at one time greatly overrated. Indeed, we nowadays avoid an equable climate when seeking a cure for early cases of pulmonary tuberculosis. We rather seek a climate with a very wide diurnal range of temperature, if it is a dry climate, as the Engadine or Egypt. While diurnal variations of temperature exert a bracing, invigorating, tonic effect, especially when they follow a certain regularity. What renders our own climate so very trying at times is that, although very variable, the variations of temperature follow no regularity. We get a week or ten days of very cold, dry weather, and then, just as the organism is adapting itself to the dry external cold, it changes, and we get a spell of moist, southwesterly winds, to be followed after a few days, by a return of the severely cold, dry weather; and so on. It is on this account that our climate can never be well suited to the out-of-door treatment of cases of catarrhal phthisis.

"*Early and Moderately Advanced Phthisis.*—There is no great difficulty, then, in deciding what to do with cases at the very onset; we must be greatly influenced by questions of age, sex, temperament, occupation, social conditions, and constitutional tendency. They will get well in a variety of places with careful management. Nor is there much room for hesitation as to what course is best to follow in decidedly advanced cases. The progressive febrile cases are best in bed with an abundant supply of fresh air. It is the moderately advanced case that calls for careful discrimination, and is the most difficult to decide about. It is now that the question of constitutional tendency comes into the foreground. Tuberculosis being an infective disease attended with greater or less dissemination of toxic substances throughout the organism, we find, as we do with the attacks of other infective microbes, varying degrees of reaction, of susceptibility, or infectibility, in different types of constitution.

"*Cases Unsuitable for Mountain Climates.*—It has been thought that the gouty constitution is antagonistic to tuberculous infection. My impression is that the rheumatic constitution is so also, and that the latter is especially prone to develop the slow, fibroid, pleurogenic form of phthisis. Now this form is not, in my opinion, well suited to altitude climates. These cases do best in dry and warm climate, such as the more protected resorts of the Riviera and the desert climate, as in Upper Egypt or Biskra. Setting aside this group, the high mountain resorts have doubtless the widest range of applicability to moderately advanced cases. There are, however, certain other cases that do not improve in these resorts. Early or moderately advanced cases, with manifest cachexia, gastric disturbance, and more or less fever, do not do well in these or, as far as I am aware, in other resorts. A mild marine climate perhaps suits these cachetic cases best. Cases with laryngeal or intestinal complications should not be sent to the mountains. Cases of much emphysema complicating tuberculous infiltration, or tubercle invading emphysematous lungs will perhaps express better what I mean, are unsuited to alti-

tude resorts. Cases of this latter group are prone to attacks of almost continuous and peculiarly uncontrollable hemorrhage, and are most unpromising. As might be expected, cases with renal complications do not do well in the mountains, and if albuminuria makes its appearance in such resorts the patient should be removed to a warmer climate. A peculiar sensitiveness to cold is a very decided drawback to wintering in the mountains; for, although the patient may be mending so far as the local disease is concerned, he or she is always depressed and unhappy. What the consumptive patient most needs for his cure is the combination of climate and sanatorium treatment. The patient, if left to his own devices, may make bad use of a good climate, while with skilful guidance in a sanatorium he may make good use of a bad one. Care without climate is better than climate without care.

"*Influence of Climate on Consumption.*—The question put to us in this discussion is: What influence has climate on the treatment of consumption, and how far can cases be grouped for treatment in certain climates? The answer to the first part of the question will be: 1. That a suitable climate relieves or removes catarrhal conditions accompanying that disease in a number of cases. 2. It raises nervous and vascular tone. 3. It increases muscular energy and the ability as well as the desire for exercise. 4. By rendering an open-air life possible, it increases the aeration of the lungs and diminishes the activity of bacterial agencies, one of the most essential conditions of arrest and cure of the disease. 5. It improves the tone and promotes the activity of the digestive functions, and so enables the patient to take the large amount of food which is needed to heighten his state of nutrition. 6. It improves the moral and mental state by surrounding the patient with a bright, cheerful and hopeful environment.

"*Grouping of Cases.*—Then, as to the answer of the second part of the question, we may say: 1. That cases seen at the very commencement of the disease, and who are otherwise in good health, may be permitted a certain amount of choice in the selection of a climate, provided it allows of many hours being spent daily in the open air, and that they are placed under admittedly hygienic conditions. A choice may be made from climates of altitude, the desert climate, the inland plateaux of South Africa, the sea voyage for those with a decided liking for the sea, and suitably placed sanatoria. 2. For progressive febrile cases, repose in a bed or on a couch at home, in the best conditions practicable for the access of air and sunshine to their apartments. 3. For advanced cases home is best if the conditions of home life are favorable, or the warm marine climates with cheerful surroundings if home life is unfavorable or change is urgently desired. 4. For catarrhal cases, warm soothing climates like Madeira or Teneriffe are best. 5. For rheumatic or gouty cases of the fibroid or pleurogenic type—dry, marine climates or the desert climate are suitable. 6. For the so-called "scrofulous cases," if free from catarrh, fairly bracing marine climates; if with catarrh, mild marine climates should be prescribed. 7. For most other moderately advanced cases, with the limitations already mentioned, the climate of the high mountains, above the cloud belt, is the most curative. I have not made a "hemorrhagic" group because I do not think it would be a natural one; every hemorrhagic case must be, in my opinion, considered apart, and dealt with on its own merits.'"

Measures Adopted by Different Nations for the Prevention of Consumption. PROFESSOR P. BROUARDEL, dean of the Faculty of Medicine of Paris,—The Right Honorable Henry Chaplin, M.P., president of the local government board, who presided, introduced him as the most distinguished authority on sanitary science in Europe. Professor Brouardel said that the mortality from tuberculosis varied in different countries. In some it was accountable for a sixth, in others a fifth, and in others a fourth of the total mortality. Long before the infectiousness of tuberculosis was discovered the struggle against it was commenced in England. The English, convinced by observation that tuberculosis thrived in damp dwellings, in 1836 passed a law providing for the construction of healthy houses. Since then more than ten acts of parliament to render salubrious the dwellings of the poor had been passed, and the mortality from tuberculosis had been reduced 40 per cent. The anti-tuberculous education of public opinion which was now progressing, was of great importance. In 1889, under the presidency of the Prince of Wales the National Association for the Prevention of Tuberculosis was formed. Its object was further prevention by educating the masses. Germany had founded societies for the construction of sanatoria, and then societies for the propagation of the idea, to popularize sanitary ideas. These societies are small and scattered in different localities, forming provincial groups. They, too, publish popular pamphlets. In Belgium there is a National League against tuberculosis, with its seat in Brussels; each province has an independent branch. In Norway, the Storthing voted 40,000 crowns for the purpose of printing and distributing a popular work on tuberculosis, by Dr. Klaus Haussen, and 2000 crowns to form a traveling fund for physicians wishing to gain information about the management of sanatoria. In France the Society for the Prevention of Tuberculosis by Popular Education had collected those who could teach with authority, such men as Lavisse, Matignon, Victorien Sardou, Landouzy, etc. They addressed meetings, and explained the rules of prophylaxis. Professor Brouardel, as president of the Polytechnic Association, had performed the same service in Paris. This year 38 lectures had been given to 12,000 pupils. Thus, gradually, in all countries, the public were beginning to realize that personal care and cleanliness were necessary, and that a consumptive was only dangerous when necessary precautions were neglected, that the danger lay in the sputum. England had the great merit of recognizing the evils of insalubrious dwellings, and passing laws ordering their destruction; and further of enacting laws for the erection of sanitary dwellings which had been supplemented by the beneficence of private individuals. In 1850 a law was passed in France dealing with unhealthy dwellings, and another in 1894. In the crowded parts of towns tuberculous foci were created which were a source of danger to the inhabitants. In Paris the mortality from tuberculosis varied in different districts from 10 to 100 per 10,000 inhabitants. Alcoholism he regarded as a most potent factor in propagating tuberculosis. It rendered the strongest man powerless to resist the disease. Hence the high mortality from tuberculosis in classes addicted to drink. Tatham's figures showed that taking the mean mortality from tuberculosis at 100, that of bartenders was 257; of brewers, 148; saloon-keepers, 140. The idea that tuberculosis could be cured dated back to Hippocrates, who said: "Phthisis, if treated early enough, gets well." In 1838 Carswell, one of England's most distinguished physicians, wrote: "Pathological anatomy has never, perhaps, given a more decided proof of the cure of disease than of phthisis." Laennec, Nat, Guillot, and Letulle had proved that in more than half the necropsies performed old healed tubercular lesions were found. Professor Brouardel had found at the morgue in Paris, where he frequently made necropsies in cases of accidental death, that in half the cases if the person had lived in Paris for ten years healed tubercular lesions, cretaceous or fibrous, were present. That treatment might be of service in the early stage, M. Calmette conceived the idea that instead of waiting for the workman to come, the doctor should seek him. He opened an antituberculous dispensary at Lille, which had been eminently successful. Another had been established in Paris. The best way to ferret out the disease was to have an "agent-workman" who would notice when his comrades began to cough, and advise them to go to the dispensary; who, alive to the dangers of a badly kept workshop, would superintend its cleansing. Professor Brouardel said that in Germany there were 83 sanatoria open, or ready to be opened. Of those who left the sanatoria in a satisfactory condition it had been shown that in 1896, 46 per cent. were able to work; in 1897, 47 per cent., in 1898, 58 per cent., and in 1899, 60 per cent. In France several sanatoria had been opened, and others were in process of erection. Since Chauveau showed that it was possible for tuberculous germs in food to produce tubercles in the intestinal tract, attention has been turned to precautions for preventing the consumption of meats and milk from tuberculous animals. Professor Brouardel concluded with an eloquent peroration, saying

that by a united effort the whole of the civilized world might succeed in exterminating the cruelest scourge that had ever fallen on it.

The Lancet, July 27.

The Administration of the Manchester Milk Clauses, 1899. JAMES NIVEN.—The working of the law in regard to the inspection of milk and the control of its sale in the city of Manchester is detailed by Niven, who calls attention to some special points. He thinks that in some ways the law has been practically inoperative; thus, the notification of a suspected condition of the udder by farmers has been neglected; the penalty is inadequate. He does not think the observance of the milk clause is adequate to the entire results expected. The points which he insists upon are: 1. That cows shown to suffer from tuberculosis of the udder should be compelled by law to be slaughtered in the presence of the veterinary surgeon employed under the milk clauses. 2. That all restrictions on the inspection of herds supplying the district with milk should be removed. 3. That a heavy penalty should be attached to failure to notify suspicious conditions of the udder.

Sterilization and Pasteurization vs. Tubercle-Free Herds, Etc. E. W. HOPE.—The comparative dependence upon sterilization or pasteurization and the insurance of absolute absence of tubercle in herds supplying milk are discussed by Hope, who thinks that while raw milk is specially liable to contamination, sterilization, valuable as it is, is after all only an expedient, and must not be put in such prominence that the importance of the other safeguards of absolute cleanliness of source and handling are neglected. Beyond any question, he says, the ultimate advantage lies in obtaining the milk from herds free from tuberculosis. A comparison is made with having water from a contaminated source and making it pure later by chemical processes or boiling and obtaining it in the first place from an uncontaminated source. He thinks it is quite possible to insure that the milk-supply shall come from cows free from tuberculosis.

Natural Immunity from Tuberculosis in Natal, South Africa. JAMES F. ALLEN.—The topography and climate of Natal, especially the upland region in which Pietermaritzburg is situated, are described by Allen, who claims that tuberculosis is there almost unknown, though it does exist to a very limited extent; cattle are absolutely free from it in that region, that is, the locally-bred cattle running wild on the veldt, and the human species is almost equally immune. There are no signs of the disease increasing as a local product. The conditions do not tend to produce it on account of the almost open-air mode of living. The man in the street is more in evidence there than anywhere else that he knows of, and the climate is so mild that sleeping in the open air at night without risk is perfectly possible at all seasons. The two races alien to the region, the European and East Indian, both thrive and physically improve in this particular section. The importation of consumptives, however, he thinks, should be regulated so that patients are not sent in a hopeless and destitute condition to become public charges. If this is not attended to he believes that the government will follow the example of New Zealand and refuse entry to persons suffering from tuberculosis.

Examination of Carcasses in Cases of Cattle Tuberculosis. WILLIAM BROWN.—Various symptoms of tuberculosis as found in the postmortems of cattle are described in detail. He has found at least eight cases of tuberculosis of the brain; in two of the animals an oblique carriage of the head was observed during life; in another vertigo, and in a fourth, paralysis. Ocular tuberculosis was not uncommon. This usually begins somewhere in the uveal tract, gradually pushing forward into the anterior cavity. He has never been able to find the bacilli in this situation. The pharyngeal glands are specially liable to be affected. He has been in the habit for years of condemning the herd in every case where contamination of the carcasses was determined upon. The tonsils are, in his opinion, well defined bodies in the ox and are sometimes tuberculous. Tubercular cervical glands of any prominence are generally removed by the butcher, so one sees comparatively few in which it existed. Tuberculosis of the epicardium and pericardium, though not of the cardiac muscles, and several cases of laryngeal tuberculosis in animals have been observed. The lungs and pleura, of course, are the most frequent seats of the disease, but it is found also in other viscera. It is not unusual to find it in the peritoneal covering, and sometimes in the substance of the organ. The liver is occasionally enormously enlarged. Tuberculosis of the peritoneum of the spleen is extremely common, but involvement of its substance is rarely or never seen. This, he thinks, may be due to the functional activity of the organ. The kidneys in adult animals are rarely tuberculous. The peritoneum may be affected and tuberculosis of the uterine muscle and its peritoneal covering is common, and occasionally there is a tubercular endometritis. The ovaries and Fallopian tubes are frequently tubercular, and tuberculosis of the bladder presents much the same character as that of the uterus. Tuberculosis of the udder shows itself in small yellowish deposits with or without calcification, nevertheless containing tubercular products, or there may be diffuse deposits of infiltration, resembling to the naked eye cirrhosis, but showing under the microscope tubercular follicles and bacilli. It is important for the veterinarian to remember the physical characteristics of this form, because the absence of nodulation might suggest a non-tubercular condition. In such cases the tuberculin test would aid in the diagnosis. Induration of the udder is common among dairy cattle, and we can hardly expect cattle-owners to exercise much care in the discrimination between tubercular indurations and non-tubercular ones, even had they knowledge on the subject. Bone tuberculosis is rarely seen, owing to the difficulties of observation. Brown has seen a few cases of tuberculosis of the sternum. The tubercle follicle may be regarded as a special arrangement, and modification of leucocytes and phagocytes for the purpose of resisting the infection by the tubercle bacillus. The giant cell forms a constant and conspicuous feature in the early stages of bovine tubercle growth as it does in the human subject. By many observations of bovine tubercle he thinks the origin of the giant cell may be more simply explained than by such terms as epithelioid cells, karyokineses, and karymitosis. On examining the giant cell on section, a a central dirty-yellowish mass is seen with frequently numerous tubercle bacilli. Surrounding this we have a row of cells, which, so far as he can judge, differ in no way from surrounding leucocytes or phagocytes. In some cases the giant cell is composed entirely of leucocyte-looking cells, but usually there is a central granular mass surrounded by a row of cells. Probably the original cell is a solid sphere and what looks like giant cells may be due to segments taken near the periphery or poles of the sphere. The central portion may be regarded as debris of dead leucocytes from conflict with the tubercle bacilli in the interior. He thinks that as soon as the tubercle bacilli invade the tissue, leucocytes and phagocytes squeeze their bodies through the walls of the capillaries and "go for" the bacilli, which they isolate in groups and surround, forming a so-called giant cell.

Medical Press and Circular, July 3.

The "Monoma." HERBERT SNOW.—Lawson Tait distinguished two forms of myoma of the uterus: The ordinary form which is usually multiple when first encountered or soon becomes so, and the rarer, soft edematous myoma invariably solitary and thus remaining, but always increasing in bulk. The author holds, while the common myoma is unquestionably a benign new growth, the rarer, soft edematous myoma is truly a malignant one. Snow had the opportunity of examining a microscopic section from two of these tumors, one showing only non-striated muscle fiber, and the other the abundant nuclei and small spindle cells of a myo-sarcoma. In such matters, however, he insists that the clinical evidence of malignancy is far more trustworthy than the report of a microscopist, who has never seen the case. The malignant portion is commonly limited to certain areas, which may be neglected in thin sections made for the microscope or may escape notice, even if included. He reports a case in which a patient had a tumor removed by celiotomy and did well for

several days, and then suddenly died from intestinal obstruction and rupture without any mechanical source of obstruction. A very minute region of the tumor displayed the heaped-up leucocytes and abundant cell proliferation denoting cancerous degeneration. He calls attention especially to the following points: "1. The existence of this progressive and malignant growth, for which I venture to propose the new term 'monoma.' 2. The importance of differentiating it from the comparatively harmless myoma, by this or some other distinctive word. For, here, there can be no question of tentative measures or of delay. The disease is malignant, and once recognized should be immediately removed. 3. The important question of diagnosis hitherto neglected and as yet unsettled. The presence or absence of vaginal hemorrhage, as insisted on by Lawson Tait, is untrustworthy. With that event alcoholic habits have much to do; age also is an uncertain factor. If we encounter a solitary rounded, doughy, central uterine tumor which is growing rapidly, while the patient is losing weight; if we find an indistinct fluctuation, so that we doubt whether it is not an ovarian cyst we are dealing with, and if there has been much recent trouble and anxiety, then I hold we are justified in diagnosing a monoma and in advising prompt excision." The naked-eye appearances of tumor will resemble the ordinary myoma, but its solitary condition, the division of cut surfaces into lobules between which are connective-tissue trabeculæ infiltrated with serum; the presence of soft areas into which one can easily push one's finger, and the greatly hypertrophied uterine wall simulating pregnancy, differentiate it. Under the microscope the malignant portions should show numerous leucocytes with cancerous proliferation of the muscle nuclei, while the non-malignant display only the phenomena of well-organized muscle. The pathologist, however, must be supervised or the section will probably be taken from the tough well-organized area and the really important parts be neglected.

Annales de l'Institut Pasteur (Paris), June.

Role of Intestinal Parasites in Appendicitis. J. GIRARD. The appendix was resected as a prophylactic measure in a child of 8, during the evacuation of an abscess in the right iliac fossa. The appendix appeared normal on the outside, but it contained a male and female trichocephalus and the head of one was buried in the lining mucous membrane. A zone of inflammation extended around this spot and leucocytes, streptococci and other micro-organisms were numerous in the inflamed tissue.

Antirabic Vaccinations in 1900. E. VIALA.—Out of the 1420 persons who received antirabic vaccination at the Pasteur Institute during 1900 four died. Besides these, one died during treatment and six others in less than fifteen days afterward. Experiments on dogs have shown that when the nerve cells were already invaded before treatment was commenced, death follows in less than fifteen days. In 179 cases, including the 4 fatal ones, the rabies was proved by positive inoculation of other animals; in 866 it was established by veterinary examination, and in 375 it was merely suspected. The mortality in the first group was, therefore, 2.23 per cent., or 0.28 per cent. of the total number treated.

Archives de Neurologie (Paris), May.

Results of Operative Treatment of Jacksonian Epilepsy. RAYMOND.—In this article thirty-one cases are reviewed, all treated by excision of a portion of the cortical zone in the epileptogenic focus. Of these, nine were improved; 13 were cured (3 more than three years ago), and 9 were unaffected. Some writers attribute recurrence to cicatricial adhesions, but Raymond believes that it is due to pathologic substitution by sufficient epileptogenic centers. In some of the cases the region of Rolando appeared intact. The alterations may possibly be of a purely dynamic nature, and may extend over a considerable portion of the cerebral cortex.

Archives Generales de Med. (Paris), July.

Erysipelas. H. ROGER.—Salves, plasters and collodions in the treatment of erysipelas have been completely banished from Roger's service, which included 1568 cases last year. He finds that spraying the affected part with a solution of ether saturated with camphor relieves, and does no harm. Collodion cracks, and the sharp edges of the crack cut the inflamed tissues. He applies hot compresses as the best means of local treatment. In case of gangrene of the limbs, he orders a local bath of 1 to 10,000 potassium permanganate, dressing with gauze moistened with neutralized hydrogen dioxid. If the gangrene becomes threatening, he injects the dioxid diluted with an equal amount of a 4 to 1000 solution of sodium bicarbonate, injecting 5 or 6 c.c. at three or four points around the lesion. General treatment is the same as that for any infectious disease.

Revue Mensuelle des Maladies de l'Enfance. (Paris), April.

Rheumatic Chorea. E. WEILL.—A child of 7 suffered from rheumatism localized in the muscles of legs and arms, with spasmodic contractions simulating tetany, chorea, plastic endocarditis, dyspnea, etc., but no arthropathy. The autopsy disclosed an acute interstitial myocarditis. The periosteum and tendon sheaths were the seat of numerous rheumatic lumps. Those in the tendon sheaths were of the usual type, but those in the periosteum were due to a process similar to that of an endocarditic granulation, an interstitial inflammation with fibrinous exudation. The rheumatic infection in this case seemed to avoid the serous tissues and localize by preference in the interstitial connective tissue.

May.

Pathogenesis of Nightmares and Night Terrors in Children. J. G. REY.—In Rey's large experience he has always found that nightmares and night terrors could be traced to some obstacle to respiration and hematosis, either direct or of reflex origin. Both are merely the result of a slow, prolonged intoxication with carbon dioxid, which explains all the concomitant symptoms.

June.

Manipulative Treatment of Congenital Luxation of the Hip-Joint. G. NOVÉ-JOSSERAND.—From an experience with 115 cases of congenital luxation of the hip-joint, this writer concludes that the Lorenz method of treatment applied before the patient is 5 years old, gives an anatomic and functional result which represents an actual, radical cure in 50 per cent., and a satisfactory functional result in 80 per cent. Nearly every case is improved. No other method gives results that can be compared with this. The younger the patient, the better the chances of success. Even 16 to 17 months is not too young, if the children are trained well enough to allow of a bandage being worn. After the fifth year, success is less frequent and the functional results are less perfect. The improvement in the limping and in the figure, the ability to bear fatigue and the fact that the troubles résulting from the luxation remain stationary at least, are sufficient grounds to recommend the method until the tenth year. After that age, the dangers of serious fractures and nervous troubles, contraindicate it except in especially favorable cases. Even between 5 and 10, a pure supra-cotyloid luxation with no tendency to become aggravated and with but slight limping, may spontaneously improve, while this method of treatment will probably cause little, if any, improvement.

July.

The Mechanism of Infectious Erythemata. P. NOBECOURT.—Study of ten young children with infectious erythemata has convinced Nobecourt that the mechanism of these infections is somewhat as follows: In the course of an infection from the streptococcus or some other germ, the liver fails to destroy all the toxins elaborated, and the kidney is unable to eliminate them all. The unneutralized toxins, thus retained in the body, affect the vasomotor centers for the skin, and induce an erythema or purpura.

Arsenic Iodid in Chronic Bronchitis in Children. R. SAINT-PHILIPPE.—In the bronchitic tendency noted in children after convalescence from infectious diseases, or in the emphysematous bronchitis observed in rachitic, scrofulous or lymphatic children, medication should aim to stimulate nutrition and change the secretions. Cod-liver oil answers these

conditions, but is seldom accepted by the spoiled children of our day. Potassium iodid, for the same reason, can not be kept up long enough to accomplish its purpose. Under these circumstances, arsenic iodid has proved extremely useful in several years of experience. Saint-Philippe orders it in the formula of 30 cg. in 30 gm. distilled water. Five drops are taken at each meal, increasing by a drop morning and evening to fifteen or twenty. This dose is kept up for a month, then decreased in the same proportion to five drops, suspended for eight or ten days and recommenced.

Revue Neurologique (Paris), April 30.

Hysteric Aphasia. G. GUILLAIN.—The case described was diagnosed as a typical chronic, right hemiplegia with aphasia from embolism or thrombosis, and was long treated as such without relief. The diagnosis was then altered to a functional lesion of hysteric origin. The affection had commenced with a sudden onset after a violent emotion, the subject being a young man free from syphilis and arteriosclerosis. Among the suspicious signs were that the leg did not drag in walking, and that the patient could pick up a pin on the table with ease. The knee-jerk and all the reflexes on one side were exaggerated. Flexion of the elbow was equal on both sides.

Revue de Therapeutique (Paris), July 1 and 15.

The New Conception and Treatment of Gout. A. MOREL-LAVALLÉE.—THE JOURNAL has already mentioned—p. 289—Joulie's recommendation of phosphoric acid as a means of restoring missing acidity to the organism. He is not a physician, but in his chemical research he discovered that 12 out of every 13 arthritic subjects are hypoacid, and that only one is hyperacid. Instead of being saturated with uric acid, as generally assumed, by far the larger proportion of gouty and other arthritic subjects suffer from the lack of normal acidity. He remarks that almost any acid would answer the purpose and comply with the therapeutic indications, but for various reasons he recommends phosphoric acid as the best treatment for all forms of the arthritic diathesis in which the acidity of the urine is subnormal. Morel-Lavallée has recently had occasion to observe a case which has proved not only a brilliant confirmation of these views, but explains the mechanism, and hence, solves the therapeutic problem. He had in his charge for fourteen months a patient with an ordinary impetigo of the face and fingers, gradually assuming an ulcerative, seborrheic character. The thick, fatty matter that filled the ulcerations and the tunnels beneath the skin could be massaged along and squeezed out through the intact skin beyond the lesions. In the fourteenth month of this cutaneous affection, it suddenly changed completely. The soft edges of the ulcerations became hard and as if calcified; the substance eliminated grew more and more chalky until the particles were actually calcareous. The ulcerations became more symmetrical in their arrangement, coinciding exactly with that of the superficial lymphatic vessels of the face and terminal phalanges, and were located at the pouches above the valves, and at the points of anastomosis. From all of them were eliminated the chalky particles above mentioned. Gout was unknown in the patient's family, but he was a confirmed arthritic, and at various times an excess of uric acid had been noted in his urine. Analysis now showed no uric acid, nor excess of urates, but the chlorids were scanty and there was phosphaturia. The coefficient of the acidity of the urine was one-third less than normal, and at the same time, chemical analysis of the calcareous particles eliminated from the ulcerations disclosed that they were composed of calcium phosphate and sulphate. The essence of this peculiar case of ulcero-calcifying, phosphatic-calculous lymphangitis was thus revealed as the result of hypoacidity. The alkaline earthy phosphates, derived from resorption of the bones or from the food, were insoluble in the hypoacid fluids of the body, and consequently circulated undissolved and were precipitated at the points where the circulation was most sluggish from the anatomic structure or from a preceding lesion. Phosphates are thus precipitated in hypoacid subjects and urates in the hyperacid. These conditions may alternate or succeed each other. When the amount of carbon dioxid in the blood, saturated with ammonia from the disassimilation of nitrogenized matters, becomes diminished from any cause, the alkaline earthy phosphates in the blood become neutral and insoluble basic phosphates and are swept along in the circulation in the form of a mineral sand. This sand may obstruct the lymphatic or blood capillaries and induce inflammation and more or less pain in the organs affected—the viscera, articulations or skin. This precipitation of salts is probably the cause of gout and allied affections, and the loss of the phosphates debilitates the organism. These assumptions were established as facts by the results of treatment in the case described. Phosphoric acid was administered and the old accumulations of calcareous matters massaged out through the ulcers and the intact skin. In four days the scene had changed as if by magic; the calcareous matters became transformed into a transparent, gelatiniform substance, and the prominent, clogged lymphatic vessels subsided and became permeable for the first time in months. In arthritism the metabolism may be diminished and the oxidations reduced, uric acid and the urates in excess, the subjects hyperacid and the nutrition retarded. On the other hand, the metabolism may be increased, the oxidations excessive, the outgo exceeding the intake, the subjects hypoacid and the nutrition accelerated. The arthritic subject is a victim of either retarded or galloping nutritional processes, due respectively to hyperacidity and to hypoacidity. The latter condition prepares the soil and entails gouty cachexia or some wasting disease, rachitism, phosphatic or oxalic gravel, hyperchlorhydric dyspepsia, varices, hemorrhoids or eczema. The cause of these affections is the precipitation of the salts of the serum in the living subject, rendered insoluble by the lack of the acid needed to keep them dissolved. Lavallée concludes: "If, as Joulie asserts, in twelve-thirteenths of the cases the subjects are hypoacid, the alkalies with which they have been so systematically dosed, must have directly added to the deposits of phosphates in the capillaries, and thus piled up an imperishable monument to the glory of routine therapeutics." He explains the undoubted benefit derived from courses of mineral waters as due to the mechanical rinsing out of the capillaries, etc., by the large amounts of water ingested.

Beitraege z. Geburt. u. Gynaek. (Leipsic), iv, 1.

Intra-Uterine Bag for Delivery with Deformed Pelvis. F. AHLFELD.—Looking over his maternity records for ten years, Ahlfeld discovered that whereas formerly, an average of 60.4 per cent. of the children of mothers with pelves so deformed that artificial delivery was necessary, left the hospital alive, the average has fallen to 44.8 per cent. since the introduction of the dilatable rubber bag as a routine means of inducing delivery in these cases. The bag interferes with delivery and he now uses it during the first stage only. He finds that better results are attained when the delivery is not postponed too long, and the infants are extracted and placed at once in the incubator. He makes every effort to secure head presentation.

Primary Carcinomatous Degeneration of Dermoid Cyst. E. KEHRER.—All of the eight cases on record have proved rapidly fatal, an epithelioma in seven and an adenoma in one. A personal case is described, the patient 46 years old. Death was due in this case to pulmonary embolism. The age ranged from 41 to 65 years in all but one case, in which the patient was 21 years old.

Bacterial Flora in Mouth of the Newborn. O. KNEISE.—In 97.5 per cent. of a large number of infants examined, abundant bacterial flora was discovered in the mouth at the moment of birth. Staphylococci and streptococci were particularly numerous and virulent in many cases. The bacteria found were always identical with those discovered in the vaginal secretions at the same time, and are evidently due to the aspiration of these secretions in the infant's attempts to swallow, or they are forced into its mouth by pressure of the vaginal muscles. These germs in the infant's mouth are probably the source of mastitis in many cases, and in its treatment, the child must be kept from the affected breast if necessary. They also prove the fallacy of the assumption of the auto-sterilization of the vagina.

Deutsche Archiv f. Klin. Med. (Leipsic), lxx, 3 and 4,

Typical Signs of La Grippe. F. FRANKE.—In 1892 Franke noticed in la grippe a typical red stripe on the anterior pillars of the soft palate, and this sign he has never failed to find after the first few days of sudden onset. It is particularly marked and significant in chronic or recurring cases. The stripe varies from 1 to 2 mm. in width, the maximum 6 to 7 mm. at the top, and looks like a dark red rainbow arching with the palate, interrupted only in the center, as the uvula is never involved, nor the tonsils nor tongue. It is sometimes a bluish red and may cause subjective symptoms of constriction, relieved by swabbing with a 2 per cent. solution of nirvanin. He has also noted a typical swelling of the papillæ of the front of the tongue, sometimes confined to the lower surface. At every recurring attack they swell again, suggesting the scarlet fever tongue. The spleen is usually enlarged in la grippe, even in the chronic stages. These three signs will serve to differentiate the disease from the deceptive pseudo-neuralgias, pseudo-appendicitis, etc. Another sign is the tendency of the subjects to be chilly or catch cold on the slightest provocation. Cold hydrotherapy is injurious in such cases.

Muenchener Med. Wochenschrift, July 16.

A Crystalline Immunization Product. H. BUCHNER.—The serum of rabbits treated with preliminary injections of chemically pure peptone, produces a specific precipitation when mixed with a dilute solution of peptone, which assumes the form of round or oval crystals. Buchner calls these crystals globulites and states that they are amazingly resistant. They are insoluble and unchanged in concentrated, hot nitric and hydrochloric acid and cold sulphuric acid, in alcohol, etc., and are soluble only in hot, concentrated sulphuric acid, in which they slowly dissolve. They swell slightly in caustic potash. The substance of the crystals turns brown under protracted dry heat with an odor as of burnt horn, and an ash skeleton remains, insoluble in concentrated hydrochloric acid. He found that serum from rabbits treated with beef blood produced the same ring of crystals after the addition of the solution of peptone as from the control animals treated with peptone, and the reaction was even more rapid and pronounced in the former case. Rabbits injected with even as little as 3 c.c. of beef blood produced a serum that precipitated the crystals in two minutes after the addition of the peptone.

Milk Treated with Rennet in Infant Feeding. F. SIEGERT.—THE JOURNAL called attention at the time to von Dungern's announcement that the addition of a little rennet to milk rendered it infinitely more digestible, absolutely preventing the formation of large curds in the stomach. The Höchst works manufacture a chemically pure rennet especially for this method of infant feeding. Enough can be taken up on the point of a knife for 200 gm. of milk. It is added to the blood-warm milk in the bottle and shaken once, then placed in warm water for five or ten minutes until the milk clabbers. The bottle is then vigorously shaken until the clots are broken up into minute flakes, when it is ready for use. Siegert has been testing this method on a large scale and considers it a distinct advance. From his experience with more than fifty infants during the last six months he most strongly recommends it to all physicians. The results in his experience have been invariably satisfactory. Milk thus treated is equally adapted to older, dyspeptic or debilitated children or adults.

Scopolamin-Morphin Anesthesia. B. KORFF.—From an experience with eighty patients on whom serious operations were performed when under the influence of the scopolamin-morphin method of anesthesia recommended last year by Schneiderlin, Korff announces that it is a very valuable method of narcosis, free from danger or inconvenience and with many advantages over other methods. Vomiting does not occur; the patients come to the table quiet and drowsy and after they are put back to bed, they sleep quietly, without tossing, for nearly twelve hours, free from pain of any kind. These conditions are ideal for the adhesion and healing of the operative wounds. Nearly all wake up and ask when the operation is going to begin. When they wake they are ready to take soup, coffee, etc.; appetite and digestion proceed normally; the heart action, respiration and renal functions are undisturbed. The pupils react normally after ten to twenty-four hours. In only one of the cases was any disturbance noted, and this was a pulse of 46 for twenty-four hours. The scopolamin and the morphin are antagonistic in their action. Morphin retards and scopolamin accelerates the respiration and heart action. Morphin paralyzes the sensory, and scopolamin the motor nerves. The method is yet in the tentative stage, and larger doses might be given. Korff limited his doses to .4 mg. scopolamin with 1 cg. morphin. After the patient is prepared for the operation, a liquid breakfast is taken at 7; at 8:30 the first dose is injected, 4 mg. scopolamin and 1 cg. morphin. At 10:30 the same dose is injected at another point. Certain patients may require a third injection at 12 of the same dose. The operation is commenced an hour after the last injection, and if necessary, two or three drops of chloroform may be administered to complete the anesthesia. From now on, Korff expects to use 1.2 mg. scopolamin at a dose, as he is convinced of its harmlessness under these conditions, and this will render the chloroform superfluous. All writers unite in lauding the sedative action and harmlessness of scopolamin.

July 23.

Thirty-four Abdominal Operations Without Narcosis. A. SCHMITT.—With a 1 per cent. solution of cocain or occasionally with Schleich's infiltraton anesthesia, Schmitt performed thirty-four major operations on patients whom he deemed too debilitated to bear general narcosis. He found that the pain was comparatively slight. Traction of any of the abdominal tissues causes the patient pain, but the parietal peritoneum, the stomach, intestines, omentum and bladder can be incised and grasped in forceps without pain. Strange to say, two of the ten patients on whom gastro-enterostomy was done, succumbed to post-operative pneumonia, although thorough precautions were taken in every case to avoid chilling the tissues. It suggests the possibility that cocain, or any anesthetic, is in itself liable to induce pneumonia. This assumption, however, is disproved by the assertion that pneumonia does not follow operations on goiter, etc., although as much of the anesthetic may be used as for an abdominal operation. The true explanation is probably the debilitated condition of the patient combined with some latent affection of the air passages.

Formalin for Inoperable Carcinoma. F. TORGGLER.—In order to clean, dry and keep under control an inoperable carcinoma of the uterus. Torggler swabs it with 4 per cent. solution of formalin, repeating the swabbing later with a 10 per cent. solution, leaving the swab in place for five or ten minutes each time. His experience with 150 cases during the last four years has been extremely satisfactory with formalin as a palliative measure.

Neurologisches Centralblatt (Leipsic), July 1.

Myasthenia Gravis. L. LAQUER.—An intelligent artisan, 30 years old, with no syphilitic nor alcoholic antecedents, noticed in 1896 sudden attacks of vertigo, sleep disturbed by violent nervous palpitations, oppression and distress, and occasional syncope after long walks. The symptoms gradually increased and included pallor and anemia, oppression in stomach and pains in head and back. In 1900 he began to find difficulty in raising his arm, followed by ptosis in both lids and the muscles of chewing and swallowing became easily fatigued. The patient succumbed to the course of this progressive myasthenia which had always been restricted to the motor sphere. The autopsy showed that all the organs were macroscopically sound except one. In the place of the thymus, a tumor had developed, 5 by 3 cm. in diameter, close to the pericardium and adherent to the lung at one point. The tumor contained numerous accumulations of blood with islands of tissue composed of lymphoid cells and macrophages characteristic of the normal thymus, also Hassal's corpuscles. The walls of the small veins and some of the smaller arteries had been destroyed, and the walls and lumen were crowded with

these same cells. They were also discovered scattered through the muscles, accompanied by the microscopic accumulations of blood. The small lymphoid cells predominated. The accumulations of cells were probably metastases in the muscles of the malignant thymus tumor. The deltoid and diaphragm were the only muscles examined. The same accumulations of cells were found also in the heart, especially in the pericardium, but were much less numerous. The portions of the nervous system examined seemed to be intact.

Inherited Associated Movements. M. LEVY.—A case is described of remarkable, symmetrical co-ordinated movements, pathologic only in their intensity and their involuntary character. The impulse to mirror-writing was a prominent feature in the case, which was especially striking on account of the fact that the entire syndrome had been perpetuated through three generations. The father wrote mirror-writing at will, but the son could not write any other way.

Virchow's Archiv (Berlin), 164, 3.

Air Lavage of Pleural Cavity after Paracentesis. KAWAHARA.—Immediately after evacuation of the effusion in case of pleuritis, the air is allowed to enter the pleural cavity through the same canula. After the pressure has been equalized, the remaining portion of the effusion is aspirated and air is allowed to enter again, repeating this irrigation of the cavity with air as long as any effusion can be aspirated. By this method all danger from negative pressure is avoided, and repeated tests, experiments and clinical research have shown that there is no danger of suppuration. Pyogenic microorganisms do not develop under these conditions and, consequently, it is unnecessary to filter the air. The effusion can be evacuated gradually at intervals of several hours in case of a hemorrhagic effusion and is especially valuable under these circumstances. It is also peculiarly adapted for cases in which paracentesis has to be interrupted for any cause, or when the evacuation of the effusion is hindered by pleuritic adhesions or by impaired elasticity of the lung. Kawahara reports 39 cases in detail, although he has had an experience of more than 70 in all since 1891. Death occurred in 5 per cent.; the termination of 10 per cent. is unknown; 85 per cent. recovered.

Zeitschrift f. Klin. Med. (Berlin), xxxiv, 1 and 2.

Etiology of Carcinoma. E. v. LEYDEN.—The intracellular parasites that have been discovered in carcinomata are probably protozoa—tender creatures which require protection such as is furnished by the albumin and fat on which carcinomata are nourished. The fat droplets in carcinomata are what render its study with the microscope and stains so difficult.

Experimental Inherited Tuberculosis. F. F. FRIEDMANN.—One or two drops of a diluted culture of the tubercle bacillus were injected into the vaginas of rabbits immediately after the animals had coupled. In every case it was found that one or more of the bacilli had penetrated into the fertilized ovum with the spermatozoa. None of the 500 sections was negative. In every case also, all the other bacilli had been harmlessly eliminated through the vagina. The embryo was thus infected without the intermediation of the mother, and the latter was unharmed by the paternally derived infection. None of the bacilli were found swallowed by leucocytes. The preliminary report of this research was mentioned in THE JOURNAL a few weeks ago.

Rivista Sperimentale di Freniatria (Reggio), xxvii, 1.

Acid Intoxication in Epilepsy. P. PINI.—The injection into rabbits of brain substance from the cadavers of epileptics did not cause symptoms of intoxication beyond a slight rise in temperature. Injection of 2 to 5 c.c. of blood, drawn from an epileptic in the intervals between seizures, had no effect on the animals, but the injection of 1 to 3 c.c. of blood drawn during an attack, produced paralysis of the hind legs in the rabbits, and all died in the course of forty days. Supplementing these facts with those noted at the autopsy of twenty epileptics who had died during an attack, Pini has become convinced that epilepsy is an acid intoxication. Gout is due to abnormal elimination of uric acid, and epilepsy to some abnormal process in the formation of uric acid. The epileptic seizure is a kind of safety valve that relieves the organism from the substances produced in the morbid metabolism.

Rivista di Patologia Nerv. e Ment. (Florence), May.

Multiple Cysticercosis of the Brain and Epilepsy. A. LUI.—The epilepsy in the case reported had been developing for ten years. The patient was a young man. At the autopsy cysticerci were found disseminated through the cortex and meninges, respecting the motor zone. The case is a striking confirmation of the assumption of the cortical nature of epilepsy.

Anales de Oftalmologia (Mexico), July.

To Improve the Results of Ocular Prothesis. O. WERNICKE.—Before proceeding to the enucleation of the eyeball, a portion of skin in the gluteal region is disinfected. After the eyeball has been removed, a thread of catgut is passed through the tendon of each of the rectus muscles. A disc of skin with considerable fatty tissue adhering is cut out of the gluteal region and sutured in place of the eyeball in the orbit. The rectus muscles are sutured to the edge of the derma and the conjunctiva drawn up over it with a purse-string suture. After four or five days the suture is removed, which allows the conjunctiva to retract to the edge of the implanted disc. The latter soon loses its cutaneous appearance. The conjunctiva is not sacrificed and has only to cover the space normally covered by it, while the sac retains its normal shape.

Books Received.

Acknowledgment of all books received will be made in this column, and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A MANUAL OF SURGICAL TREATMENT. By W. Watson Cheyne, C.B., M.B., F.R.C.S., F.R.S., Professor of Surgery in King's College, London, and F. F. Burghard, M.D., and M.S. (Lond.), F.R.C.S., Teacher of Practical Surgery in King's College, London. In seven volumes. Volume V. The Treatment of the Surgical Affections of the Head, Face, Jaws, Lips, Larynx, and Trachea; and the Intrinsic Diseases of the Nose, Ear and Larynx. By H. Lambert Lack, M.D. (Lond.), F.R.C.S., Surgeon to the Hospital for Diseases of the Throat. Cloth. Pp. 470. Price, $5.00. Philadelphia and New York: Lea Brothers & Co. 1901.

THE RETROSPECT OF MEDICINE. A Half-Yearly Journal, Containing a Retrospective View of Every Discovery and Practical Improvement in the Medical Sciences. Edited by James Braithwaite, M.D., Lond., Consulting Obstetric Physician and Surgeon to the Leeds General Infirmary, and E. F. Trevelyan, M.D., Lond., B.Sc., F.R.C.P., Assistant Physician to the Leeds General Infirmary. Volume CXXIII. January-June, 1901. Issued July, 1901. Cloth. Pp. 469. Price, $1.50. London: Simpkin, Marshall, Hamilton, Kent & Co., Ltd.

THE ILLINOIS STATE BOARD OF HEALTH. Report of the Sanitary Investigations of the Illinois River and Its Tributaries. With Special Reference to the Effect of the Sewage of Chicago on the Des Plaines and Illinois rivers prior to and after the opening of the Chicago Drainage Canal. Cloth. Pp. 219. Springfield, Ill.: Phillips Bros. 1901.

SURGICAL APPLIED ANATOMY. By Sir Frederick Treves, K.C.V.O., C.B., F.R.C.S., Sergeant Surgeon to H. M. the King. New Edition, Revised by the Author. With the Assistance of Arthur Keith, M.D., F.R.C.S., Lecturer on and Senior Demonstrator of Anatomy at the London Hospital. Illustrated with 80 Engravings. Cloth. Pp. 571. Price, $2.00. Philadelphia: Lea Brothers & Co.

FORTY-THIRD ANNUAL REPORT OF THE WASHINGTONIAN HOME, for the Year Ending April, 1901. Located at 41 Waltham Street, Boston. Paper. Pp. 19. Boston: T. W. Ripley.

ANNUAL REPORT OF THE BOARD OF HEALTH OF THE CITY OF LANCASTER, PA., for the Fiscal Year Ending Dec. 31, 1899. Paper. Pp. 149. Lancaster, Pa.: Halbach.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume XIII. Thirteenth Session, held at Atlanta, Ga., Nov. 13, 14 and 15, 1900. Cloth. Pp. 436. Published by the Association, 1901.

WESTERN RESERVE UNIVERSITY. Reports of the President and Faculties. 1900-1901. Paper. Pp. 181. Cleveland: Winn and Judson. 1901.

TRANSACTIONS OF THE AMERICAN MICROSCOPICAL SOCIETY. Edited by the Secretary. Twenty-third Annual Meeting, held in New York City, June 28, 29 and 30, 1900. Volume XII. Paper. Pp. 228. Lincoln, Neb.: State Journal Co. 1901.

New Patents.

679,202. Producing pure saponin solutions. M. C. L. Althausse, Billwarder-an-der-Bille, Germany.

679,203. Obtaining hydrocellulose. M. C. L. Althausse, Billwarder-an-der-Bille, Germany.

679,204. Obtaining hydrocellulose. M. C. L. Althausse, Billwarder-an-der-Bille, Germany.

678,943. Compress. John C. Davis, Kansas City, Mo.
679,262. Antiseptic applying apparatus. Wilber M. Kelso, Chicago, Ill.
678,892. Apparatus for sterilizing liquids. John C. Miller, Canton, Ohio.
678,893. Apparatus for sterilizing and cooling liquids. John C. Miller, Canton, Ohio.
679,239. Cataphoric pad. John F. Mossberg, Minneapolis, Minn.
679,036. Ophthalmoscope. Elmer L. Ryer, New York City.
679,198. Hypodermic syringe. Charles Witkowski, Boston, Mass.
679,044. Ophthalmoscope. Henry L. de Zeng, Philadelphia.
679,524. Water-bag. Charles J. Bailey, Newton, Mass.
679,600. Culture of bacteria. Albert Caron, Haus Ellenbach, Germany.
679,667. Adjustable invalid's table. Samuel M. Davis, San Francisco, Cal.
679,671. Syringe nozzle. Charles T. Hannigan, Providence, R. I.
679,478. Menstrual receptable and uterine supporter. Jacob R. Lang, Rockport, Ind.
679,626. Sterilizing apparatus. Arthur E. Leach, Winthrop, Mass.
679,388. Chemical apparatus. J. F. W. Meyer, Scheune, near Stettin, Germany.
679,436. Atomizer. Emanuel J Sonn, New York City.
679,712. Speculum. Richard E. Venning, Charlestown, W. Va.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., July 25 to 31, 1901, inclusive:

Walter K. Beatty, contract surgeon, now at San Francisco, Cal., to report for assignment in the Department of California.

Arthur J. Boyer, contract surgeon, from Fort Columbus, N. Y., to Fort Lawton, Wash., for post duty.

Thomas S. Bratton, captain and asst.-surgeon, U. S. A., leave of absence granted.

James Carroll, contract surgeon, from Washington, D. C., to Havana, Cuba, not later than Aug. 5, 1901, for the purpose of continuing the investigation into the causation and treatment of yellow fever, and on the completion of this duty to return to his proper station not later than Oct. 1, 1901.

William H. Corbusier, major and surgeon, U. S. A., member of an examining board in New York City, relieving Major H. S. Kilbourne, surgeon, U. S. A.

G. Parker Dillon, contract surgeon, from Fort Sheridan, Ill., to post duty at Jefferson Barracks, Mo.

Guy L. Edie, major and surgeon, U. S. A., sick leave of absence granted.

Charles B. Ewing, major and surgeon, U. S. A., is relieved from duty in the Division of the Philippines to take effect Sept. 4, 1901, and will then proceed to the United States, reporting his arrival by telegraph to the Adjutant-General of the Army.

Bower E. Himes, contract surgeon, now at Mill Creek, Pa., will proceed to Fort Missoula, Mont., for post duty.

John S. Kulp, captain and asst.-surgeon, U. S. A., member of an examining board in New York City, relieving Major W. D. Crosby, surgeon, U. S. A.

William F. Lewis, captain and asst.-surgeon, U. S. A., member of a retiring board at Fort Leavenworth, Kan.

Charles J. Long, contract dental surgeon, from Rock Island, Ill., to San Francisco, Cal., en route for duty in the Division of the Philippines.

John S. Marshall, contract examining and supervising dental surgeon, relieved from duty in Washington, D. C., to proceed to Milwaukee, Wis., to represent the Medical Department of the Army at the meeting of the National Dental Association, to be held in that city Aug. 5 to 9, 1901, and thereafter to proceed to San Francisco, Cal., for assignment at the Presidio of San Francisco.

Robert W. Morgan, contract examining and supervising dental surgeon, relieved from duty in Washington, D. C., and assigned to Columbia Barracks, Havana, Cuba.

Robert T. Oliver, contract examining and supervising dental surgeon, relieved from duty in Washington, D. C., to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

George R. Plummer, captain and asst.-surgeon, Vols., leave of absence extended.

Henry I. Raymond, major and surgeon, U. S. A., member of a board in Chicago, Ill., for the examination of such persons as may be ordered before it to determine their fitness for appointment as lieutenants in the army.

Henry H. Rutherford, lieutenant and asst.-surgeon, U. S. A., is honorably discharged from service as a captain and asst.-surgeon of Vols.

Herbert G. Shaw, lieutenant and asst.-surgeon, U. S. A., recently appointed and now at the Presidio of San Francisco, Cal., is assigned to temporary duty at that post.

Charles Smart, colonel, asst.-surgeon-general, to proceed to New York City on official business pertaining to the Medical Department of the Army and upon the completion of this duty to return to his station in Washington, D. C.

Richard P. Strong, lieutenant and asst.-surgeon, U. S. A., leave of absence granted.

August von Clossman, contract surgeon, from Jefferson Barracks, Mo., to duty in St. Louis, Mo.

Joseph W. Walsh, contract surgeon, from duty at the General Hospital, Washington Barracks, D. C., to Fort Canby, Wash., for post duty.

Samuel T. Weirick, captain and asst.-surgeon, Vols., recently appointed, relieved from duty at Fort Gibbon, Alaska, to proceed to San Francisco, Cal., en route for assignment in the Division of the Philippines.

J. Samuel White, contract surgeon, from duty at the General Hospital, San Francisco, Cal., to Fort Gibbon, Alaska.

Timothy E. Wilcox, major and surgeon, U. S. A., member of a board at Chicago, Ill., for the examination of such persons as may be ordered before it, to determine their fitness for appointment as lieutenants in the Army.

Allie W. Williams, lieutenant and ass.-surgeon, U. S. A., member of an examining board in New York City, relieving Captain John S. Kulp, asst.-surgeon, U. S. A.

Navy Changes.

Changes in the Medical Corps of the Navy, week ended Aug. 3, 1901:

Asst.-Surgeon J. W. Backus, detached from the *Vermont* and ordered to the Asiatic station, August 16.

Asst.-Surgeon F. A. Asserson, detached from the Naval Hospital, New York, and ordered to the Asiatic station, August 16.

Surgeon S. H. Griffith, relieved as recruiting officer at Buffalo, N. Y., and ordered to continue other duties.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the U. S. Marine-Hospital Service for the seven days ended Aug. 1, 1901:

Surgeon Fairfax Irwin, granted leave of absence for twenty-one days, from August 7.

P. A. Surgeon J. O. Cobb, bureau letter of July 22, 1901, granting leave of absence for thirty days from July 24, amended so that said leave shall be effective July 25.

P. A. Surgeon C. P. Wertenbaker, to proceed to Camp Fontainebleau and adjacent coast towns as inspector.

P. A. Surgeon J. B. Greene, relieved from temporary duty at Washington, D. C., and directed to proceed to New York (Stapleton) and report to medical officer in command, for duty and assignment to quarters, relieving Asst.-Surgeon Taliaferro Clark.

Asst.-Surgeon Taliaferro Clark, upon being relieved by P. A. Surgeon J. B. Greene, to proceed to Immigration Depot, New York City, and report to Surgeon G. W. Stoner, for duty, relieving Asst.-Surgeon J. D. Long.

Asst.-Surgeon W. A. Korn, granted leave of absence for one month from August 12.

Asst.-Surgeon J. D. Long, upon being relieved by Asst.-Surgeon Taliaferro Clark, to proceed to Manila, P. I., and report to Chief Quarantin Officer for duty, July 29, 1901. Granted leave of absence for two days.

A. A. Surgeon L. C. Bean, granted leave of absence for thirty days from August 2.

A. A. Surgeon B. Y. Harris, granted leave of absence for fifteen days from August 12.

A. A. Surgeon H. McD. Martin, granted leave of absence for thirty days from August 1.

Hospital Steward T. V. O'Gorman, granted leave of absence for sixty days on account of sickness, to take effect on date of departure from station.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Aug. 3, 1901:

PLAGUE—UNITED STATES AND INSULAR.

California: Los Angeles, July 13-20, 2 cases; San Francisco, July 14-21, 1 case.
Kentucky: Lexington, April 27-May 4, 11 cases.
Michigan: Grand Rapids, July 13-27, 2 cases.
Nebraska: Omaha, July 6-20, 5 cases.
New Hampshire: Nashua, July 20-27, 1 case.
New Jersey: Newark, July 20-27, 6 cases, 1 death.
New York: New York City, July 20-27, 46 cases, 9 deaths.
Ohio: Cincinnati, July 19-26, 1 case.
Pennsylvania: Philadelphia, July 20-27, 1 case, 1 death.
Tennessee: Memphis, July 20-27, 1 case.
Utah: Salt Lake City, July 20-27, 7 cases.
Washington: Tacoma, July 14-21, 6 cases.
West Virginia: Martinsburg, July 26, 13 cases.

SMALLPOX—FOREIGN.

Argentina: Buenos Ayres, May 1-31, 247 deaths.
Austria: Prague, July 6-13, 1 case.
Belgium: Antwerp, July 6-13, 4 cases, 1 death.
France: Paris, July 12-19, 5 deaths.
Gibraltar: July 1-14, 2 cases.
Great Britain: Glasgow, 12-19, 3 cases, 1 death; London, July 6-13, 12 cases.
India: Bombay, June 25-July 2, 4 deaths; Calcutta, June 22-29, 5 deaths; Karachi, June 8-30, 13 cases, 6 deaths.
Italy: Messina, July 6-13, 5 cases, 4 deaths.
Netherlands: Rotterdam, July 13-20, 1 case, 1 death.
Russia: Moscow, June 30-July 6, 9 cases, 3 deaths; Odessa, July 6-13, 1 case, 1 death; St. Petersburg, June 15-July 6, 7 cases, 1 death.

PLAGUE—INSULAR.

Hawaii: Honolulu, July 17, 1 death.

PLAGUE—FOREIGN.

India: Bombay, June 27-July 2, 65 deaths; Calcutta, June 22-29, 14 deaths; Karachi, June 8-30, 23 cases, 23 deaths.

YELLOW FEVER.

Costa Rica: Port Limon, July 4-21, 2 cases.
Cuba: Cienfuegos, July 15-18, 2 cases.
Mexico, Vera Cruz, July 13-27, 2 cases, 1 death.

CHOLERA.

India: Bombay, June 25-July 2, 3 deaths; Calcutta, June 22-29, 23 deaths.
Java: Batavia, June 8-22, 49 cases, 27 deaths.